# ILLINOIS NATURAL HISTORY SURVEY

## T E C H N I C A L  R E P O R T

# Botanical Survey and Assessment of the Illinois Interstate-90 Tollway Improvement Corridor in Boone, Kane, McHenry, and Winnebago Counties, Illinois

Michael J. C. Murphy

Division of Biodiversity and Ecological Entomology
Biotic Surveys Section

To:

Illinois State Toll Highway Authority
2700 Ogden Ave.
Downers Grove, IL 60515

INHS Technical Report 2007(64)
28 December 2007

## INTRODUCTION

In continuation of requested surveys associated with ongoing improvements of the Illinois toll highway system, botanical surveys were conducted within the western one-half of the Interstate-90 tollway improvement corridor, in Boone, Kane, McHenry, and Winnebago counties (see included digitized aerial maps 1 – 6). The 2007 survey corridor extended from Sandwald Rd. (just west of IL Route 47; Kane County – Map 1) west, to Mill Rd. (west of the Kishwaukee River; Winnebago County – Map 6). Additionally, as discussed in the previous year's report (Murphy 2006), population parameters were determined for the *Carex cryptolepis* (yellow sedge) population discovered late in the 2006 growing season in the eastern one-half of the I-90 study corridor, approximately 0.8 km (0.5 miles) east of Powers Rd. (see Map 7 [additional map]).

The western portion of the Interstate-90 corridor occurs within the Morainal Section and Winnebago Drift Section of the Northeastern Morainal Natural Division (Schwegman 1973). Both of these sections are characterized by highly variable topography resulting from erosional and depositional processes associated with the early as well as late stages of the Wisconsinan glaciation (Willman and Frye 1970, Wiggers 1997). Natural communities associated with these sections include several types of forest and prairie, fen, marsh, bog, and sedge meadow (Schwegman 1973). The corridor was approximately 29 miles in length and the width of the corridor extended 150 ft. beyond the pavement edge of both eastbound and westbound lanes. Specific survey goals were to 1) search for threatened or endangered plant species in or immediately adjacent to the corridor, and 2) determine if any high-quality natural plant communities were present within the corridor.

## METHODS

Botanical surveys were conducted between 2 May 2007 and 30 August 2007, with the search emphasis on threatened and endangered plant species and/or high-quality natural communities. Cumulative species lists were compiled for all community types/plant associations encountered. The width of the survey corridor (150 ft. beyond pavement edges) was extended when higher quality natural communities were encountered in order to more thoroughly evaluate natural integrity and species composition. Several hundred plant specimens were collected and preserved for laboratory examination with GPS coordinates taken at all collection locations. Digital photographs were taken and/or voucher specimens collected for threatened or endangered plant species that were encountered. Population parameters for threatened or endangered species were determined by one or more of the following methods: 1) estimating total number of individuals (genets) for non-rhizomotous and non-stoloniferous species, 2) estimating total number of flowering/fruiting stems for rhizomotous and stoloniferous species, 3) estimating total number of basal rosettes for rhizomotous and stoloniferous species, and 4) estimating total population area occupied based on digitized aerial photographs. Upon identification of all collected specimens, a floristic quality assessment based on Taft et al. (1997) was conducted on noteworthy areas within the corridor which possessed the highest degree of habitat integrity to further evaluate their natural quality. Collected specimens are deposited in the Illinois Natural History Survey Herbarium (ILLS), in Champaign, Illinois. Community classification and grades of natural quality follow White (1978). Grades of natural quality are as follows:

Grade A: Relatively stable or undisturbed communities
Grade B: Late successional or lightly disturbed communities
Grade C: Mid-successional or moderately to heavily disturbed communities
Grade D: Early successional or severely disturbed communities
Grade E: Very early successional or very severely disturbed communities

When possible, data from historic collections of threatened and endangered species were checked in the vPlants database (vPlants 2007), which includes collections from the Field Museum of Natural History (F), the Morton Arboretum (MOR), and the Chicago Botanic Garden (CHIC). Botanical nomenclature throughout the report follows Mohlenbrock (1986). If not specifically indicated, scientific names followed by an asterisk (*) denote vascular plants that are adventive to this region.

## RESULTS AND DISCUSSION

### Threatened and Endangered Plants

Two Illinois state endangered vascular plant species were found within the survey corridor: 1) *Ranunculus cymbalaria* Pursh (seaside crowfoot), and 2) *Scirpus paludosus* A. Nelson (alkali bulrush). Additionally, population parameters for the state endangered *Carex cryptolepis* Mackenzie (yellow sedge), discovered during 2006 surveys, were found to include both the eastbound and westbound sides of I-90 in Kane County, with a total of 657 individual clumps (genets) located (Appendices 1 – 4). Twenty-eight colonies of *Ranunculus cymbalaria* were located within the study corridor, occurring in Boone, Kane and McHenry counties, occupying a total estimated area of approximately 0.338 ha (Appendices 5 – 8). Likewise, occurring in Boone, Kane and McHenry counties, were 15 *Scirpus paludosus* colonies, occupying a total estimated area of 0.118 ha (Appendices 9 – 12).

Several natural community types ranging from low grade D to mid grade C occurred in the corridor, and include: 1) dry-mesic prairie, 2) mesic/dry-mesic upland forest, 3) mesic/wet-mesic floodplain forest, 4) marsh, 5) sedge meadow, 6) low/medium-gradient creek, and 7) medium-gradient river. The majority of areas within the corridor were cultural communities, which include cropland, mowed grassy areas, roadside areas, successional field, and artificial ponds. One noteworthy area represented by a remnant marsh/sedge meadow persisting in and along, a wet, roadside ditch, was located within the corridor (Appendix 13 & Map 6) and will be discussed in further detail later in the report. Scientific names and common names are given in Appendix 14 for all vascular plant species found within the corridor.

***Carex cryptolepis* Mackenzie** (yellow sedge) CYPERACEAE – State Endangered

*Carex cryptolepis* (Figure 1) is a cespitose, perennial sedge which in Illinois typically grows in fens and calcareous prairies (Swink & Wilhelm 1994, Mohlenbrock 1999, Herkert & Ebinger 2002). This taxon is historically known from four counties within the state – Cook, Du Page, Lake, and McHenry (Mohlenbrock 1999, Herkert and Ebinger 2002), and was recently discovered in a fifth – Kane County (Murphy 2006). Curiously, Crins (2002) does not attribute this species to Illinois even though the first Illinois collections date back to 1896 and 1900 (INPC |1970s|, Herkert 1994, vPlants 2007). *Carex cryptolepis* ranges from Canada (New Brunswick, Newfoundland, Nova Scotia, Ontario, and Quebec) to the United States (Connecticut, Indiana, Illinois, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Ohio, Rhode Island, Vermont, and Wisconsin) – reaching the southern edge of its range in

Illinois, Indiana, and Ohio (Deam 1940, Mohlenbrock 1999, Crins 2002). The most recent and only Illinois collection of this taxon in the ILLS herbarium was collected in 1991 in Lake County, by Marilyn Morris (*Morris #844, Morris & Simon #846*), in a "wet field." Four other Illinois collections from Cook and McHenry counties are contained in the vPlants database, with the earliest specimen collected in 1900 (Cook Co.), and the most recent collected in 1985 (Cook Co.) and 1991 & 1992 (McHenry Co.) (vPlants 2007). The first Illinois collection was apparently collected on 11 July 1896, in Cook County, by Henry C. Cowles in "Chicago Swamps" (INPC |1970s|). *Carex cryptolepis* was initially listed as state endangered in 1994 when one population was believed extant within the state (Lake Co. – *Morris #844*) (Herkert 1994), and this protective status has remained unchanged to the present (Nyboer & Ebinger 2004). Currently, it is uncertain how many *C. cryptolepis* populations are known to be extant within the state, however, through examination of available detailed resources, the number (including the Kane County population) appears to range from 5 to 9 (INPC |1970s|, Herkert 1994, Swink & Wilhlem 1994, Herkert & Ebinger 2002, Murphy 2006, IDNR 2007, vPlants 2007). Synonymous names that have also been applied to this taxon include *C. flava* var. *fertilis* Peck and *C. flava* var. *rectirostra* Gaudin (Deam 1940, Swink & Wilhelm 1994, Crins 2002).

Two populations of *Carex cryptolepis* (Figures 1 & 2, A–B) were located within the eastern portion of the I-90 corridor, in Kane County (Appendices 1 – 4; Map 7), and are probably relicts of a sedge meadow community that historically occurred here. Thus, these two localities represent what was once a larger, continuous population. All individuals of *Carex cryptolepis* occurred in moist-wet roadside ditch habitats, and were confined to the bases and lower slopes of these ditches (Figure 3 A&B), which is likely in response to higher moisture levels as well as less intense mowing activity at these topographic positions. Additionally, all *C. cryptolepis* individuals occurring on side-slopes of the ditches were limited to the slopes furthest away from the interstate; that is, slopes facing the interstate and separated from it by the wet ditch (Figure 3 A&B).

The first population, located on the eastbound side of I-90, occurred on the side-slope of a wet ditch dominated by *Typha angustifolia* (Figure 3A), and occurred with several species characteristic of wet-mesic prairie/sedge meadow habitats, including *Asclepias incarnata, Carex bebbii, C. granularis, C. vulpinoidea, Euthamia graminifolia, Juncus dudleyi, Leersia oryzoides, Lycopus americanus, Lythrum alatum, Scirpus pendulus, Solidago gigantea,* and *Verbena hastata* (see also Appendix 3). This population consisted of 337 individual plants (genets – genetically distinct individuals) with a total of 980 fruiting culms (Appendices 1 & 3), and occurred within a semi-linear strip paralleling I-90 (Figure 3A) approximately 2 m in width and 295 m in length. Individual clumps within this area were irregular in distribution, with large gaps often occurring between individual clumps and/or groupings of clumps.

The second population, located along the westbound lanes, occurred in a ditch dominated by *Phalaris arundinacea* (Figure 3B). As with the first population, many of the associate taxa were species characteristic of wet-mesic prairie/sedge meadow habitats, and included *Asclepias incarnata, Carex granularis, Juncus nodosus, Leersia oryzoides, Lycopus americanus, Lythrum alatum, Scirpus pendulus, Solidago gigantea,* and *Verbena hastata* (see also Appendix 4). This population consisted of 320 individual plants, with a total of 2,234 fruiting culms (Appendices 2 & 4). Similar to the first population, plants along the westbound lanes occurred within a somewhat linear strip approximately 2-3 m in width and 430 m in length, parallel to the interstate (Figure 3B). Individual clumps were also irregular in distribution, with large gaps often occurring between individual plants and/or groups of plants.

***Ranunculus cymbalaria* Pursh** (seaside crowfoot) RANUNCULACEAE – State endangered.

*Ranunculus cymbalaria* is a stoloniferous perennial forb (Figure 4 A&B) that inhabits moist, often saline, muddy or sandy margins of various types of wetlands, and moist ditches, often forming extensive colonies through sexual as well as asexual reproduction (Jones 1963, Gleason & Cronquist 1991, Swink & Wilhelm 1994, Herkert & Ebinger 2002, Murphy 2006). The geographic range of the seaside crowfoot includes North America, Central America, South America, and Eurasia (Whittemore 1997). In North America, this taxon is distributed throughout much of Canada and also occurs in a small portion of Greenland, while in the United States it is known to occur in Alaska, Illinois, Michigan, Wisconsin, all states west of the Mississippi River (except Arkansas and Louisiana), and in several northeastern states including: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, and Rhode Island (Whittemore 1997). Synonymous names for the seaside crowfoot include *Halerpestes cymbalaria* (Pursh) Greene and *Cyrtorhyncha cymbalaria* (Pursh) Britt. ssp. *alpina* (Hook.) A. & D. Love (Kartesz 1997, USDA, NRCS 2007).

Within Illinois, *Ranunculus cymbalaria* is historically known from 7 counties – Cook, Du Page, Henry, Kane, Lake, McHenry, and Will (Mohlenbrock 1981, Swink and Wilhelm 1994, Herkert & Ebinger 2002), with recent collections known from Cook, Kane and Lake counties (Murphy 2005, Murphy 2006, vPlants 2007). Additionally, all Lake County collections are very recent (1986 to 2005), with no older historic collections (Swink 1969, Swink & Wilhelm 1979, Mohlenbrock & Ladd 1978, INPC |1970s|, vPlants 2007). Sheviak (1981) notes that most Illinois collections of the seaside crowfoot were made during the nineteenth century in the Chicago region, and nearly all specimens housed in the herbaria of the Chicago Botanic Garden (CHIC), Field Museum of Natural History (F), Illinois Natural History Survey (ILLS), Illinois State Museum (ISM), Morton Arboretum (MOR), and University of Illinois (ILL), were collected in the nineteenth century or very early twentieth century (1900 to 1905) (INPN |1970s|, ILLS 2007, vPlants 2007). Specific habitat information for the seaside crowfoot on historic collections is often lacking or non-existent, but includes such descriptions as “damp prairie,” “wet sandy soil,” “wet grass,” “wet ground,” “mud edge of stream,” “moist sandy prairies,” “wet prairies,” and “wet sandy ground” (INPN |1970s|, ILLS 2007, vPlants 2007). Beal (1870) notes seaside crowfoot being very common further inland from the Lake Michigan shoreline, south of Chicago, occurring in the “low pastures and meadows on richer soil.” Other early collections (as early as 1859) of this taxon also lack specific habitat information, but again reveal early occurrences of the seaside crowfoot within the state.

Twenty-eight *Ranunculus cymbalaria* colonies were located within the corridor, occurring in Boone (2 colonies), Kane (8 colonies) and McHenry (18 colonies) counties (Appendix 5, Maps 1, 2, 3, & 4). With all locations combined, there were an estimated 46,677 individual rosettes and 29,577 flowering/fruiting stems, occupying an estimated area of 0.338 ha (3,380 $m^2$) (Appendix 5). Area estimates are based on polygons digitized onto digital aerial photographs, and due to the large scale of the aerial photos and the spatially heterogeneous nature of the seaside crowfoot populations, polygons encompass areas occurring on the periphery of these populations as well as areas where plants are sparse, and estimates are therefore amplified, and approximate. Additionally, populations which appear linear on digitized aerial photographs were continuous to discontinuous in occurrence, with scattered gaps occurring between colonies and/or small groupings of plants.

The majority of seaside crowfoot populations located in the survey corridor were encountered in moist-wet roadside ditches. However, several colonies were located on dry, gravelly road shoulders. Associate taxa growing with *Ranunculus cymbalaria* in wet ditches included: *Agropyron repens**, *Agrostis alba* var. *palustris*, *Atriplex patula**, *Centaurium*

*pulchellum*, Juncus torreyi, Leptochloa acuminata*, Festuca arundinacea*, Hordeum jubatum*, Lythrum salicaria*, Phalaris arundinacea*, Phragmites australis*, Puccinellia distans*, Rumex crispus**, ***Scirpus paludosus,*** *Scirpus tabernaemontanii, Solidago sempervirens*, Sonchus arvensis* var. *glabrescens*, Spergularia media*, Suaeda depressa**, and *Typha angustifolia**. Associate species occurring on dry, road shoulders were relatively few, and included: *Agropyron repens*, Ambrosia artemisiifolia, Atriplex patula*, Festuca arundinacea*, Hordeum jubatum*, Sonchus arvensis*, Spergularia media**, and *Suaeda depressa**. All seaside crowfoot populations occurred in areas where competition from other species was greatly reduced or virtually eliminated through such disturbances as flooding, erosion and resulting exposures of bare soil, and/or roadside mowing. Additionally, xeric growing conditions occurring on southerly exposed, gravelly road shoulders, provided suitable reduced-competition habitat for the seaside crowfoot in limited portions of the corridor. Several seaside crowfoot populations located in wet ditches were found growing on the edges of dense *Phragmites autralis** colonies, occurring in the large spaces typically found between the coarse stems of this robust species.

Individual ramets of the seaside crowfoot (see Figure 4B) have been observed to produce as many as 150 to 800 seeds (pers. observ.). It is uncertain how many ramets can be produced from a single genet, and it is therefore uncertain how many seeds an individual genet can produce, but the number is undoubtedly in the thousands if not tens of thousands. Specimen *#2032* (Figure 4B) possess 16 ramets produced from a single genet and was collected in mid May. Had its growth not been truncated early in the growing season, it would have undoubtedly produced numerous additional ramets. Seeds of this taxon are extremely small and likely readily dispersed along ditches by flowing water. Temporary adherence to mowing equipment also likely offers an additional method of dispersal.

***Scirpus paludosus*** **A. Nelson** (alkali bulrush) CYPERACEAE – State endangered.

The alkali bulrush (Figure 5 A&B) is a rhizomotous, colony-forming perennial sedge that inhabits various, often saline, wetland areas such as marshes, shores, and lake margins (Gleason and Cronquist 1991, Smith 2002), and can tolerate alkaline environments with a pH up to 9.0 (NRCS Plant Guide). Additionally, this species can survive short periods of complete inundation and is reported to grow well when the water table is within 10 cm of the surface (NRCS Plant Guide). *Scirpus paludosus* occurs throughout a wide geographic range, including North America, South America, Central America, and the Hawaiian Islands (Smith 2002). In North America, *S. paludosus* is distributed throughout much of Canada, and within the United States, is known to occur in Illinois, Michigan, all states west of the Mississippi River (except Arkansas and Louisiana), and several northeastern states (Smith 2002).

The alkali bulrush was apparently first discovered in the Chicago region in 1950 (INPN |1970s|, vPlants 2007), occurring as an extensive colony in a roadside ditch in Cook County (Swink 1969), but was noted as being much reduced in size by the late 1970s (Swink and Wilhelm 1979). In 1981, a population was reported from a natural salt marsh in La Salle County, and was believed to be indigenous at this site (Sheviak 1981). The population occurring in La Salle County is the basis for listing the alkali bulrush as a state endangered species. By 1994, the alkali bulrush was reported from three counties within the Chicago region – Cook, Grundy, and Lake, and these populations were all noted as being adventive (Swink and Wilhelm 1994). In total, there are six counties from which the alkali bulrush is documented in Illinois – Cook, Du Page, Grundy, Kane La Salle, and Lake (Swink and Wilhelm 1994, Herkert and Ebinger 2002, Murphy 2006), and the majority of populations in these counties occur in roadside ditches. Additionally, Swink and Wilhelm (1994) and Smith (2002) note that the accumulation

of road-deicing salts in these roadside ditches contributes to the occurrence and spread of this taxon in these environments. Synonymous names for the alkali bulrush include *Bolboshoenus maritimus* (L.) Palla, *Bolboshoenus maritimus* (L.) Palla subsp. *paludosus* (A. Nelson) T. Koyama, *Scirpus maritimus* L. var. *paludosus* (A. Nelson) Kükenth., and *Scirpus pacificus* Britt. (Smith 2002, USDA, NRCS 2007).

Within the survey corridor, 15 colonies of *Scirpus paludosus* were found in and along roadside ditches, occurring in three counties – Boone (10 colonies), Kane (2 colonies), and McHenry (3 colonies) (Appendices 9–12; Maps 2–5). The Boone and McHenry County populations represent the first reports of this taxon from these counties, and the Kane county populations represent the second report of this taxon from this county. With all populations combined, there were an estimated 6,850 flowering/fruiting stems of *S. paludosus*, occupying a total estimated area of 0.118 ha (1,180 m²) (Appendix 9). Again, as discussed with area estimates for *R. cymbalaria*, these estimates are approximate. As with the seaside crowfoot, this taxon appears to thrive in environments where the hydrology and hydrologic disturbance regime provide ample moisture and reduced interspecific competition with other plants.

Plants frequently to occasionally associated with *S. paludosus* included: *Agropyron repens**, *Aster subulatus**, *Atriplex patula**, *Leptochloa acuminata**, *Festuca arundinacea**, *Hordeum jubatum**, *Lythrum salicaria**, *Phalaris arundinacea**, *Phragmites australis**, *Ranunculus cymbalaria*, *Rumex crispus**, *Scirpus fluviatilis*, *S. tabernaemontanii*, *Solidago sempervirens**, *Sonchus arvensis* var. *glabrescens**, *Spergularia media**, *Suaeda depressa**, and *Typha angustifolia**.

## Summary of Natural Communities and Plant Associations

The majority of areas encountered within the western portion of the Interstate-90 survey corridor were cultural communities, which included cropland, mowed grassy areas, roadside areas, successional field, and artificial ponds. All natural communities encountered were degraded, ranging in quality from low grade D to mid grade C, and included: 1) dry-mesic prairie, 2) mesic/dry-mesic upland forest, 3) mesic/wet-mesic floodplain forest (including shoreline areas), 4) marsh, 5) sedge meadow, 6) low/medium-gradient creek, and 7) medium-gradient river. Descriptions of low/medium gradient creeks and rivers will be included in descriptions for floodplain forest communities.

One noteworthy area was located within the corridor. This area, occurring in a wet, roadside ditch with flowing water draining to the Kishwaukee River (Winnebago County) (Map 6), was represented by a linear strip of remnant marsh/sedge meadow that although moderately degraded, still possessed many unique and uncommon vascular plant species (Appendix 13). No threatened or endangered species however, were located in this area. Details of this remnant marsh/sedge meadow are discussed in the following section.

## Noteworthy Areas

**Marsh/sedge meadow remnant east of Kishwaukee River (Map 6)**

A remnant marsh/sedge meadow habitat occurred on the westbound side of I-90 in a roadside ditch just east of the Kishwaukee River (Map 6) (and draining directly into it). This area, consisting of a relatively narrow strip running parallel to the interstate, was confined to the drainage ditch where the water level ranged from 0.3 to 1.0 m in depth, as well as the drier adjacent margins (1 to 3 m on either side). Although moderately degraded, this area still possessed a unique and noteworthy assemblage of plants, with many species characteristic of marsh as well as sedge meadow/wet-mesic prairie habitats. Uncommon and/or conservative species occurring here, included (see Appendix 13 for additional details and relative frequencies of occurrence):

*Aster umbellatus*
*Campanula aparinoides*
*Carex bebbii*
*Carex haydenii*
*Chelone glabra*
*Cicuta bulbifera*
*Galium trifidum*
*Silene nivea*
*Veronica catenata*
*Zannichellia palustris*

Other species occurring in this area which were good indicators and/or contributing indicators of habitat type and natural quality, included (see Appendix 13 for additional details and relative frequencies of occurrence):

*Anemone canadensis*
*Angelica atropurpurea*
*Asclepias incarnata*
*Aster praealtus*
*Bidens cernua*
*Boehmeria cylindrica*
*Carex hystericina*
*Carex lanuginosa*
*Carex stricta*
*Cornus obliqua*
*Elodea canadensis*
*Epilobium coloratum*
*Eupatorium maculatum*
*Eupatorium perfoliatum*
*Glyceria striata*
*Helenium autumnale*
*Hypericum sphaerocarpum*
*Juncus dudleyi*
*Juncus nodosus*
*Juncus torreyi*
*Lathyrus palustris* v. *myrtifolius*
*Leersia oryzoides*
*Lilium michiganense*
*Lobelia siphilitica*
*Ludwigia palustris* v. *americana*
*Lycopus americanus*
*Lycopus* cf. *virginicus* (sterile)
*Lysimachia ciliata*
*Mentha arvensis* v. *villosa*
*Monarda fistulosa*
*Physostegia virginiana*
*Polygonum amphibium*
*Potamogeton* cf. *pusillus* (sterile)
*Pycnanthemum virginianum*
*Ranunculus sceleratus*
*Sagittaria latifolia*
*Scirpus acutus*
*Scirpus atrovirens*
*Scirpus tabernaemontanii*
*Scutellaria lateriflora*
*Solidago gigantea*
*Spartina pectinata*
*Thalictrum dasycarpum*
*Verbena hastata*

A total of 86 species were found within this area, with 71 native and 15 adventive. The floristic quality index was 36.4 (33.1 with adventive taxa) and the native mean C was 4.3 (3.6 with adventive taxa) (Appendix 13). These results further support the interpretation of an area possessing a noteworthy level of floristic integrity.

## Natural Communities

### Dry-mesic prairie

Only one dry-mesic prairie remnant occurred within the study corridor, and was located 6.4 km (4 miles) west of IL Rt. 20, on the eastbound side of I-90. This remnant was approximately 0.4 ha (1 acre) in area and highly degraded (low grade C to high grade D), with very low diversity. One feature identifying this area as a remnant was the extensive soil erosion and compaction having occurred on the adjacent agricultural land, which in contrast, left the soil of remnant prairie elevated nearly 30 cm (1 ft.) above that of the adjacent agricultural fields. At the interface between these two areas, the prairie sod was eroding into the agricultural fields. Woody species encroachment was extensive in many portions of this remnant, consisting of the following species (relative frequencies of occurrence – 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent):

*Cornus racemosa – 2-3*
*Juniperus virginiana – 2*
*Lonicera X bella* 2-3*
*Parthenocissus quinquefolia – 3*
*Rhamnus cathartica* 2-3*
*Rhamnus frangula* 2*
*Rubus occidentalis – 3*
*Ulmus pumila* 3*
*Vitis riparia – 3-4*

The dominant taxa were adventive species and/or native ruderal species, including:

*Achillea millefolium* – 4-5*
*Agropyron repens* – 3-4*
*Asclepias verticillata – 4*
*Aster pilosus – 4*
*Bromus inermis* – 4*
*Convolvulus arvensis* – 4*
*Euphorbia corollata – 4*
*Medicago lupulina* – 4*
*Melilotus alba* – 4*
*Meliotus officinalis* – 4*
*Poa pratensis* – 4-5*

Remaining taxa occurring in this dry-mesic prairie remnant included:

*Andropogon gerardii – 2*
*Ambrosia trifida – 2-3*
*Apocynum sibiricum – 2*
*Asclepias syriaca – 3*
*Asparagus officinalis* – 2*
*Aster ericoides – 3-4*
*Aster novae-angliae – 2*
*Calystegia sepium – 3*
*Carex lanuginosa – 2-3*
*Cirsium arvense* – 3*
*Cirsium discolor – 3*
*Cirsium vulgare* – 1-2*
*Daucus carota* – 3*
*Helianthus grosseserratus – 3*
*Helianthus rigidus – 3-4*
*Hypericum perforatum* – 3*
*Lactuca canadensis – 1-2*
*Linaria vulgaris* – 2-3*
*Monarda fistulosa – 3*
*Panicum virgatum – 2-3*
*Phluem pratense* – 3*
*Rosa carolina – 3-4*
*Silphium integrifolium – 3*
*Solanum ptycanthum – 3*
*Solidago canadensis – 3*
*Solidago gigantea – 2-3*
*Sonchus arvensis* v. *glab.* – 4*
*Stachys tenuifolia* v. *hispida – 2-3*
*Tradescantia ohiensis – 2-3*
*Verbascum thapsus* – 1-2*

### Mesic/dry-mesic upland forest

Mesic/dry-mesic upland forest areas were infrequent within the corridor, and included terrace communities west of the Kishwaukee River. All of these areas (with the exception of terraces of the Kishwaukee River – low grade C) were highly degraded (grade D). These areas were also characterized by infestations of exotic species (most notably *Alliaria petiolata*, *Lonicera X bella*, and *Rhamnus cathartica*), low diversity, and sparse vegetation. Still occurring in a few of these areas were scattered, large individuals (80 to 110 cm DBH) of *Quercus alba* (white oak) and *Q. macrocarpa* (bur oak), with horizontally spreading and/or shade-pruned

lower limbs – indicators of the open oak woodland and oak savanna communities that probably once occurred in these areas. Further descriptions are as follows (relative frequencies of occurrence – 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent):

**Canopy Species**

*Carya ovata – 3*
*Faxinus americana – 2-3*
*Gleditsia triacanthos – 2*
*Juglans nigra – 2*
*Prunus serotina – 3*
*Quercus alba – 2-3*
*Quercus macrocarpa – 2-3*
*Robinia pseudo-acacia* – 1-2*
*Ulmus pumila* – 2*

**Subcanopy Species**

*Acer negundo – 4*
*Acer saccharum – 1-2*
*Carya cordiformis – 2*
*Carya ovata – 3-4*
*Celtis occidentalis – 2-3*
*Crataegus coccinea – 1-2*
*Crataegus mollis – 2-3*
*Fraxinus americana – 2-3*
*F. pennsylvanica* v. *sub. – 2-3*
*Gleditsia triacanthos – 2-3*
*Juglans nigra – 2*
*Morus alba* – 3-4*
*Prunus serotina – 4*
*Quercus macrocarpa – 2-3*
*Quercus rubra – 2*
*Quercus velutina – 1-2*
*Rhamnus cathartica* – 3*
*Robinia pseudo-acacia* – 2*
*Ulmus americana – 2-3*
*Ulmus pumila* – 2*

**Shrubs, Woody Vines & Small Trees**

*Cornus drummondii – 2*
*Cornus racemosa – 4*
*Elaeagnus umbellata* – 4*
*Lonicera maackii* – 2-3*
*Lonicera X bella* – 5*
*Lonicera* cf. *prolifera* (sterile) - 2
*Malus ioensis – 1*
*Menispermum canadense – 2*
*Parthenocissus quinquefolia – 5*
*Prunus virginiana – 2-3*
*Ptelea trifoliata – 2*
*Rhamnus cathartica* – 5*
*Rhus glabra – 2*
*Ribes americanum – 1-2*
*Ribes missouriense – 4*
*Rosa multiflora* – 3*
*Rubus occidentalis – 3-4*
*Smilax hispida – 3*
*Solanum dulcamara* – 2*
*Toxicodendron radicans – 5*
*Viburnum lentago – 2*
*Viburnum opulus* – 3*
*Vitis riparia – 5*

**Ground Flora**

*Acalypha rhomboidea – 3*
*Agrimonia gryposepala – 2*
*Alliaria petiolata* – 5*
*Anemone quinquefolia – 1-2*
*Anemone virginiana – 2*
*Arctium minus* – 4*
*Arisaema triphyllum – 2*
*Aster lateriflorus – 3*
*Bromis inermis* – 3*
*Carex blanda – 3*
*Carex cephalophora – 3*
*Carex festucacea – 1-2*
*Carex gravida – 1-2*
*Carex grisea – 2*
*Carex jamesii – 1-2*
*Carex pensylvanica – 2-3*
*Carya ovata – 3*
*Cerastium vulgatum* – 1-2*
*Chelidonium majus* – 1*
*Circaea lutetiana* v. *cana. – 3-4*
*Cirsium vulgare* – 3*
*Dactylis glomerata* – 3-4*
*Dentaria laciniata – 2-3*
*Dodecatheon meadia – 1*
*Elymus virginicus – 2*
*Erythronium albidum – 2*
*Eupatorium rugosum – 2-3*
*Festuca obtusa – 2*
*Festuca rubra* – 2*
*Fraxinus* sp. – 3
*Galium aparine – 3*
*Geranium maculatum – 3*
*Geum canadense – 4*
*Hackelia virginiana – 4*
*Juncus tenuis – 3*
*Leersia virginica*
*Leonurus cardiaca* – 2-3*
*Lonicera X bella* – 4*
*Lychnis alba* – 2*
*Menispermum canadense – 1-2*
*Nepeta cataria* – 2-3*
*Osmorhiza longistylis – 3*
*Oxalis stricta – 4*
*Parthenocissus quinquefolia – 4*
*Poa compressa* – 4*
*Poa pratensis* – 4*
*Poa trivialis* – 1-2*
*Podophyllum peltatum – 3*
*Polygonatum commutatum – 2-3*
*Polygonum virginianum - 4*
*Prunella vulgaris* v. *elongata -3*
*Prunus serotina – 3-4*
*Ranunculus abortivus – 3*
*Ranunculus fascicularis – 3*
*Rhamnus cathartica* – 5*
*Sanicula canadensis – 1-2*
*Sanicula gregaria – 2*
*Smilax ecirrhata – 2*
*Smilax lasioneuron – 1-2*
*Smilacina racemosa – 2-3*
*Smilacina stellata – 1-2*
*Taraxacum officinale* – 4*
*Toxicodendron radicans – 3-4*
*Trillium recurvatum – 2-3*
*Veronica serpyllifolia* – 1-2*
*Vitis riparia – 5*

**Mesic/wet-mesic floodplain forest (including creek and river shoreline areas)**

Mesic to wet-mesic floodplain forest communities were infrequent within the corridor, and occurred along, or in the broader floodplain of, Coon Creek, Mosquito Creek, Spring Creek, and the Kishwaukee River. All of these areas were degraded (ranging from low grade C to grade D), having infestations of one or more exotic species, including *Alliaria petiolata, Hesperis matronalis, Lonicera X bella, Phalaris arundinacea, Rhamnus cathartica,* and *Rosa multiflora*. The following descriptions include creek and river flowing water areas as well as shoreline habitats, and are as follows (relative frequencies of occurrence – 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent):

**Canopy Species**

*Acer saccharinum – 3-4*
*Fraxinus pennsylvanica* v. *sub. – 4-5*
*Gleditsia triacanthos – 3*
*Populus deltoides – 4-5*
*Prunus serotina – 4*
*Salix nigra – 3*
*Ulmus americana – 2-3*

**Subcanopy Species**

*Acer negundo – 4*
*Acer saccharinum – 3-4*
*Celtis occidentalis – 2-3*
*Crataegus mollis – 3*
*Fraxinus pennsylvanica* v. *sub. – 4-5*
*Morus alba* – 3-4*
*Populus deltoides – 4*
*Prunus serotina – 3-4*
*Quercus macrocarpa – 2-3*
*Rhamnus cathartica* – 3-4*
*Salix nigra – 3*
*Ulmus americana – 3-4*

**Shrubs and Woody Vines**

*Clematis virginiana – 1-2*
*Cornus drummondii – 1-2*
*Cornus obliqua – 2-3*
*Cornus stolonifera – 1-2*
*Elaeagnus umbellata* – 2*
*Lonicera X bella* – 4-5*
*Lonicera maackii* – 2-3*
*Parthenocissus quinquefolia – 4-5*
*Ptelea trifoliata – 2*
*Rhamnus cathartica* – 4-5*
*Ribes americanum – 2*
*Ribes missouriense – 3*
*Rosa multiflora* – 4*
*Rubus occidentalis – 3*
*Rubus pensilvanicus – 2*
*Salix exigua – 2-3*
*Salix humilis – 1-2*
*Sambucus canadensis – 3-4*
*Smilax hispida – 3*
*Solanum dulcamara* – 3*
*Toxicodendron radicans – 4*
*Viburnum lentago – 2*
*Vitis riparia – 5*

**(Mesic/wet-mesic floodplain forest continued)**

**Ground Flora**

*Acalypha rhomboidea – 3-4*
*Agrimonia gryposepala – 2*
*Agrostis alba – 3*
*Alliaria petiolata* – 4-5*
*Ambrosia artemisiifolia – 2*
*Ambrosia trifida – 1-2*
*Angelica atropurpurea – 2*
*Apocynum sibiricum – 2-3*
*Arctium minus* – 3*
*Artemisia vulgaris* – 1-2*
*Asarum canadense – 2*
*Asclepias incarnata – 2-3*
*Aster lateriflorus – 3-4*
*Aster ontarionis – 2*
*Aster simplex – 3-4*
*Atriplex patula* – 1-2*
*Barbarea vulgaris* – 2*
*Bidens cernua – 1-2*
*Bidens frondosa – 3-4*
*Blephilia hirsuta – 1-2*
*Boehmeria cylindrica – 3*
*Brassica nigra* – 1-2*
*Calystegia sepium – 3*
*Campanula americana – 2*
*Carex aggregata – 1-2*
*Carex blanda – 3-4*
*Carex grisea – 2*
*Carex jamesii – 2*
*Carex normalis – 1-2*
*Carex spicata* – 1*
*Carex stricta – 2*
*Celtis occidentalis – 2*
*Chelone glabra – 1*
*Cicuta bulbifera – 1*
*Circaea lutetiana* v. *canadensis – 3*
*Cirsium arvense* – 3-4*
*Cirsium vulgare* – 3*
*Cryptotaenia canadensis – 3-4*
*Cuscuta* cf. *gronovii* (sterile) – 1-2
*Echinochloa crus-galli* – 2*
*Echinocystis lobata – 2*
*Eclipta prostrata – 1-2*
*Elodea canadensis – 3*
*Elymus virginicus – 3*
*Epilobium coloratum – 1*
*Equisetum arvense – 2*
*Equisetum hyemale – 3-4*
*Erigeron annuus – 3*
*Erigeron philadelphicus – 2*
*Eupatorium altissimum – 2*
*Eupatorium maculatum – 1-2*
*Eupatorium rugosum – 3*
*Festuca obtusa – 2*
*Fraxinus pennsylvanica* v. *sub. – 4-5*
*Geranium maculatum – 2*
*Geum canadense – 4-5*
*Geum laciniatum – 3*
*Glechoma hederacea* – 4*
*Hackelia virginiana – 3*
*Hesperis matronalis* – 2*
*Impatiens capensis – 3-4*
*Iris* cf. *shrevei* (sterile) – 1-2
*Laportea canadensis – 3*
*Leersia oryzoides – 1-2*
*Leersia virginica – 2-3*
*Lemna minor – 3*
*Ludwigia palustris* v. *amer. – 2*
*Lycopus americanus – 2*
*Lysimachia nummularia* – 3*
*Mentha arvensis* v. *villosa – 3-4*
*Monarda fistulosa – 1-2*
*Muhlenbergia frondosa – 2-3*
*Myosoton aquaticum* – 2*
*Oenothera biennis – 2*
*Oxalis stricta – 3-4*
*Panicum dichotomiflorum – 2*
*Parthenocissus quinquefolia – 4*
*Pastinaca sativa* – 3-4*
*Penthorum sedoides – 1*
*Phalaris arundinacea* – 5*
*Phyla lanceolata – 2*
*Phryma leptostachya – 2-3*
*Pilea pumila – 3-4*
*Polygonum virginianum – 4*
*Potentilla norvegica – 1-2*
*Polygonatum commutatum – 2*
*Polygonum pensylvanicum – 3*
*Polygonum persicaria* – 2-3*
*Polygonum scandens – 1-2*
*Potamogeton crispus* – 2-3*
*Potamogeton pectinatus – 2-3*
*Potamogeton* cf. *pusillus* (sterile) – 2
*Ranunculus sceleratus – 2*
*Rorippa palustris* v. *fernaldiana – 1*
*Rorippa sylvestris* – 2*
*Rudbeckia laciniata – 4*
*Rumex crispus* – 2*
*Sagittaria latifolia – 3*
*Sanicula canadensis – 2-3*
*Sanicula gregaria – 3*
*Saponaria officinalis* – 1-2*
*Scrophularia marilandica – 2*
*Scutellaria lateriflora – 2*
*Solidago canadensis – 3*
*Solidago gigantea – 3*
*Solidago sempervirens* – 1*
*Sonchus arvensis* v. *glab.* – 2-3*
*Stachys tenuifolia* v. *his. – 2*
*Taraxacum officinale* – 4*
*Teucrium canadensis – 2-3*
*Thalictrum dasycarpum – 3*
*Toxicodendron radicans – 4*
*Typha angustifolia* – 1-2*
*Urtica dioica – 4*
*Verbascum thapsus* – 1*
*Verbena hastata – 2*
*Verbena urticifolia – 2*
*Verbesina alternifolia – 2-3*
*Vernonia fasciculata – 1-2*
*Veronica catenata – 2*
*Viola missouriensis – 2-3*
*Vitis riparia – 4*
*Xanthium strumarium – 2-3*
*Zizea aurea – 1*

**Sedge Meadow**

Remnant sedge meadow communities were rare to infrequent within the study corridor, and with the exception of the previously described noteworthy area, all were degraded (low grade C to grade D) and relatively small < .5 ha (1.2 acres). The largest remnant (approximately 1.6 ha [4.0 acres]), east of Johnson Rd, historically had a large portion of its area occupied by *Carex stricta* (tussock sedge), a species that under seasonally flooded conditions forms dense colonies of elevated tussocks (Standley 1989). When located during 2007 surveys, this area had virtually no remaining individuals of *Carex stricta*, but only a dense matrix of remnant tussocks, likely the result of altered hydrology. These tussocks have been reported to persist for decades (Eggers & Reed 1987), and in this particular area, were completely grown-over by other species. Additionally, certain portions of this area were undergoing woody species encroachment comprised of *Fraxinus pensylvanica* var. *subintegerrima, Lonicera X bella*, Rosa multiflora*, Toxicodendron radicans,* and *Vitis riparia.* Further descriptions of remnant sedge meadows are as follows (relative frequencies of occurrence – 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent):

*Achillea millefolium* – 2-3*
*Agrostis alba – 3*
*Ambrosia artemisiifolia – 2*
*Anemone canadensis – 2*
*Angelica atropurpurea – 1-2*
*Apocynum sibiricum – 2-3*
*Asclepias incarnata – 1-2*
*Asclepias syriaca – 2-3*
*Asclepias verticillata – 2*
*Aster novae-angliae – 2*
*Aster pilosus – 3*
*Aster praealtus – 1-2*
*Calystegia sepium – 2*
*Carex bebbii – 2*
*Carex cristatella – 2*
*Carex hystericina – 2*
*Carex lanuginosa – 2-3*
*Carex molesta – 2-3*
*Carex stricta – 3-4*
*Carex vulpinoidea – 2-3*
*Cirsium arvense* – 3-4*
*Cirsium discolor – 1-2*
*Cirsium vulgare* – 2*
*Daucus carota* – 2-3*
*Equisetum arvense – 2*
*Erigeron annuus – 2*
*Eupatorium perfoliatum – 1-2*
*Eupatorium maculatum – 1-2*
*Geum aleppicum – 2-3*
*Geum laciniatum – 2-3*
*Glyceria striata – 1*
*Helianthus grosseserratus – 2*
*Juncus dudleyi – 3*
*Juncus nodosus – 2*
*Juncus torreyi*
*Leersia oryzoides – 2*
*Lycopus americanus – 3*
*Lythrum alatum – 2*
*Mentha arvensis* v. *villosa – 3*
*Pastinaca sativa* – 3*
*Phalaris arundinacea* – 4-5*
*Poa pratensis* – 3-4*
*Polygonum amphibium – 2-3*
*Potentilla simplex – 2*
*Prunella vulgaris* v. *elongata -3*
*Salix humilis – 1*
*Scirpus atrovirens – 2*
*Scirpus tabernaemontanii – 2*
*Senecio* cf. *pauperculus* (sterile) *– 2*
*Solidago canadensis – 2-3*
*Solidago gigantea – 3*
*Sonchus arvensis* v. *glab.* – 3-4*
*Stachys tenuifolia* v. *hispida – 2*
*Thalictrum dasycarpum*
*Typha angustifolia – 2-3*
*Verbena hastata – 2-3*
*Vitis riparia – 3*

**Marsh**

Marsh communities were rare to infrequent within the corridor and all were highly degraded (grade D). These areas were primarily dominated by *Typha angustifolia** (and to a much lesser degree *Typha latifolia*), with the open margins dominated by *Phalaris arundinacea** and *Salix exigua*. Diversity in marsh communities was extremely low, and further descriptions are as follows (relative frequencies of occurrence – 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent):

**(Marsh continued)**

**Canopy and Subcanopy Species (wooded margins)**

*Acer negundo – 2-3*
*Fraxinus pennsylvanica v. sub. – 2-3*
*Morus alba – 3*
*Populus deltoides – 4-5*
*Prunus serotina – 2-3*
*Salix amygdaloides – 3-4*
*Salix nigra – 3*

**Shrubs and Woody Vines**

*Eleagnus umbellata* – 1-2*
*Cornus obliqua – 1-2*
*Lonicera X bella* – 3-4*
*Parthenocissus quinquefolia – 3-4*
*Rhamnus cathartica* – 3-4*
*Rhamnus frangula* – 2*
*Rosa multiflora* – 3*
*Salix exigua – 4-5*
*Sambucus canadensis – 3*
*Solanum dulcamara* – 3-4*
*Vitis riparia – 4*

**Herbaceous Species (margins and main marsh areas)**

*Agrostis alba – 2-3*
*Alliaria petiolata* – 2*
*Apocynum sibiricum – 4*
*Aster simplex – 2*
*Bidens frondosa – 2-3*
*Carex molesta – 1-2*
*Cirsium arvense* – 4-5*
*Geum aleppicum – 1-2*
*Geum canadense – 2-3*
*Helianthus grosseserratus – 2*
*Impatiens capensis – 2*
*Juncus dudleyi – 2*
*Lemna minor – 2-3*
*Phalaris arundinacea* – 5*
*Phyla lanceolata – 1*
*Polygonum amphibium – 3*
*Rumex crispus* – 2-3*
*Solidogo canadensis – 2-3*
*Sonchus arvensis* v. *glab.* - 3*
*Typha angustifolia* – 5*
*Typha latifolia – 2*
*Urtica dioica – 2*
*Verbena hastata – 1-2*

## Cultural Communities

### Dry roadsides

All dry roadside areas were extremely degraded and were dominated by species adventive (*) to the region, and include fenceline areas parallel to the interstate. Species occurring in these areas included (relative frequencies of occurrence – 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent):

*Acer negundo – 3-4*
*Achillea millefolium* – 5*
*Agropyron repens* – 5*
*Ambrosia artemisiifolia – 3-4*
*Ambrosia trifida – 3*
*Andropogon gerardii – 1*
*Artemisia vulgaris* – 2*
*Asclepias syriaca – 4*
*Asclepias verticillata – 4-5*
*Aster pilosus – 3-4*
*Bromus inermis* – 5*
*Calystegia sepium – 2-3*
*Carex praegracilis* – 3-4*
*Chenopodium album* – 3*
*Cichorium intybus* – 4-5*
*Cirsium arvense* – 4-5*
*Cirsium vulgare* – 3*
*Cornus drummondii – 2*
*Cornus racemosa – 3*
*Convolvulus arvensis* – 4*
*Coronilla varia* – 4-5*
*Dactylis glomerata* – 3*
*Daucus carota* – 4-5*
*Dipsacus laciniatus* – 2-3*
*Dyssodia papposa* – 4-5*
*Elaeagnus umbellata* – 3*
*Erigeron annuus – 3*
*Eupatorium altissimum – 3-4*
*Eupatorium serotinum – 3*
*Euphorbia corollata – 2-3*
*Festuca arundinacea* – 5*
*Hordeum jubatum* – 3*
*Hypericum perforatum* – 3*
*Juniperus virginiana – 2-3*
*Kochia scoparia* – 3*
*Lactuca serriola* – 2*
*Leptochloa acuminata* – 2-3*
*Leucanthemum vulgare* – 4*
*Lonicera X bella* – 5*
*Lotus corniculatus* – 4-5*
*Medicago lupulina* – 4-5*
*Melilotus alba* – 5*
*Melilotus officinalis* – 5*
*Morus alba* – 4-5*
*Oenothera biennis – 3*
*Oxalis dillenii – 3*
*Parthenocissus quinquefolia – 4*
*Pastinaca sativa* – 5*
*Phalaris arundinacea* – 5*
*Phleum pratense* – 3-4*
*Physalis subglabrata – 3-4*
*Plantago lanceolata* – 4*
*Plantago rugellii – 4*
*Poa compressa* – 2-3*
*Poa pratensis* – 5*
*Potentilla recta* – 3*
*Prunus serotina – 3*
***Ranunculus cymbalaria – 2***
*Rhamnus cathartica* – 4*
*Rhus aromatica – 1-2*
*Rhus glabra – 2-3*
*Robinia hispida* – 1*
*Rosa multiflora* – 3*
*Sambucus canadensis – 3*
*Senecio plattensis – 2*
*Setaria glauca* – 4*
*Solidago canadensis – 4-5*
*Sonchus arvensis* v. *glab.* – 4*
*Sorghastrum nutans – 1*
*Spegularia media* – 3*
*Suaeda depressa* – 3-4*
*Taraxacum officinale* – 4*
*Tragopogon pratensis**
*Trifolium pratense* – 3*
*Trifolium repens* – 3*
*Ulmus americana – 2-3*
*Ulmus pumila* – 2-3*
*Verbascum thapsus* – 2-3*
*Vicia sativa* v. *nigra* – 2*
*Vitis riparia – 4*

**Wet roadsides**

Similar to dry roadside areas, wet roadside ditches within the corridor were highly degraded and dominated by species adventive (*) to the region. Several native wetland species occurred in these areas, but were usually much less frequent, and much less abundant. Vascular plant species found in wet roadside areas included (relative frequencies of occurrence – 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent):

*Agropyron repens** – 4
*Agrostis alba* – 3
*Agrostis alba* v. *palustris* – 3-4
*Alisma plantago-aquatica* v. *amer.*-2
*Allium canadense* – 1-2
*Apocynum sibiricum* – 2-3
*Asclepias incarnata* – 1-2
*Aster subulatus** – 2
*Atriplex patula** – 4
*Barbarea vulgaris** – 2
*Bidens cernua* – 1-2
*Bidens frondosa* – 2-3
*Calystegia sepium* – 2
*Carex blanda* – 2
*Carex granularis* – 2
*Carex hystericina* – 1
*Carex lanuginosa* – 1-2
*Carex praegracilis** – 2-3
*Carex vulpinoidea* – 2-3
*Centaurium pulchellum** – 2
*Cirsium arvense** – 5
*Cirsium vulgare** – 2
*Cyperus esculentus* – 2
*Dipsacus laciniatus** – 2
*Echinochloa crusgalli** – 3
*Echinocystis lobata* – 1-2
*Eleocharis erythropoda* – 3
*Equisetum arevense* – 2
*Eupatorium serotinum* – 2
*Festuca arundinacea** – 5
*Helianthus grosseserratus* – 2
*Hordeum jubatum** – 5
*Impatiens capensis* – 3
*Juncus dudleyi* – 2-3
*Juncus nodosus* – 2
*Juncus torreyi* – 3
*Leersia oryzoides* – 2
*Lemna minor* – 2-3
*Leptochloa acuminata** – 3-4
*Lythrum salicaria** – 3
*Mentha arvensis* v. *villosa* – 2
*Myosoton aquaticum** – 1
*Nasturtium officinale** – 1-2
*Phalaris arundinacea** – 5
*Phragmites australis** – 4-5
*Polygonum amphibium* – 2-3
*Polygonum lapathifolium* – 1-2
*Polygonum pensylvanicum* – 2
*Polygonum persicaria** – 3
*Potamogeton crispus** – 2
*Potamogeton* cf. *pusillus*(sterile) 1-2
*Puccinellia distans** – 4-5
***Ranunculus cymbalaria* – 2-3**
*Ranunculus sceleratus* – 3
*Rorippa palustris* v. *fern.* – 1-2
*Rumex crispus** – 3-4
*Sagittaria cuneata* – 1-2
*Sagittaria latifolia* – 2-3
*Salix nigra* – 2
*Scirpus acutus* – 2
*Scirpus americanus* – 2
*Scirpus atrovirens* – 3
*Scirpus fluviatilis* – 1-2
***Scirpus paludosus* – 2-3**
*Scirpus tabernaemontanii* – 3
*Solanum dulcamara** – 3
*Solidago canadensis* – 3
*Solidago gigantea* – 2
*Solidago sempervirens** – 2
*Sonchus arvensis* v. *glabrescens** - 4
*Spartina pectinata* – 2
*Spergularia media** – 3
*Suaeda depressa** – 3-4
*Typha angustifolia** – 5
*Typha latifolia* – 2
*Urtica dioica* – 1-2
*Veronica catenata* – 2
*Vitis riparia* – 4
*Xanthium strumarium* – 1-2
*Zannichellia palustris* – 2

**Old-field successional areas and early successional woodlands**

Old-field successional areas and early successional woodland areas were occasional to frequent within the corridor. These were degraded, old pasture areas and/or corner boundary areas between agricultural fields, many of which had, or were, becoming overgrown with woody species. Dominant vegetation consisted mainly of exotic species and/or native ruderal species. Vascular plant species found within these areas included (relative frequencies of occurrence – 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent):

*Acer negundo – 4-5*
*Achillea millefolium* – 4*
*Agropyron repens* – 3-4*
*Agrostis alba – 2-3*
*Alliaria petiola* – 4-5*
*Ambrosia artemisiifolia – 3*
*Ambrosia trifida – 3*
*Anthriscus sylvestris* – 1*
*Apocynum sibiricum – 3*
*Arctium minus* – 3-4*
*Asclepias incarnata – 1*
*Asclepias syriaca – 3-4*
*Asclepias verticillata – 3-4*
*Aster pilosus – 3*
*Barbarea vulgaris* – 2*
*Bromus inermis* – 4-5*
*Calystegia sepium – 2-3*
*Carex blanda – 2-3*
*Carduus nutans* – 3*
*Chenopodium album* – 3*
*Cichorium intybus* – 3*
*Circaea lutetiana* v. *cana. – 3*
*Cirsium arvensis* – 4-5*
*Cirisum vulgare* – 3-4*
*Convolvulus arvensis* – 3-4*
*Cornus racemosa – 3*
*Dactylis glomerata* – 3-4*
*Daucus carota* – 4*
*Elaeagnus umbellata* – 3-4*
*Equisetum arvense – 2*
*Equisetum hyemale – 2*
*Erigeron annuus – 3*
*Erysimum cheiranthoides* – 1-2*
*Eupatorium rugosum – 2-3*
*Festuca arundinacea* – 4-5*
*Fraxinus pennsylvanica* v. *sub.-3*
*Galium aparine – 3*
*Geum canadense – 4-5*
*Geum laciniatum – 2-3*
*Glechoma hederacea* – 3*
*Hackelia virginiana – 3-4*
*Hypericum perforatum* – 3*
*Juncus tenuis – 2-3*
*Juniperus virginiana – 3-4*
*Leonurus cardiaca* – 3*
*Leucanthemum vulgare* – 3-4*
*Linaria vulgaris* – 2*
*Lonicera maackii* – 3*
*Lonicera X bella* – 5*
*Lychnis alba* – 3*
*Medicago lupulina* – 3-4*
*Melilotus alba* – 3-4*
*Melilotus officinalis* – 3-4*
*Morus alba* – 4-5*
*Nepeta cataria* – 3*
*Oenothera biennis – 3*
*Osmorhiza longistylis – 2*
*Parthenocissus quiquefolia –4-5*
*Pastinaca sativa* – 4-5*
*Phalaris arundinacea* – 5*
*Phleum pratense* – 3-4*
*Physalis heterophylla – 1*
*Phytolacca americana – 2*
*Pinus nigra* – 1-2*
*Poa compressa* – 3-4*
*Poa pratensis* – 4-5*
*Polygonatum commutatum – 1*
*Polygonum virginianum – 4-5*
*Populus alba* – 1-2*
*Populus deltoides – 3*
*Prunella vulgaris* v. *elongata – 3*
*Prunus serotina – 3*
*Prunus virginiana – 2*
*Quercus macrocarpa – 1*
*Rhamnus cathartica* – 5*
*Rhus glabra – 3*
*Ribes missouriense – 3*
*Rosa carolina – 1*
*Rosa multiflora* – 3-4*
*Rubus occidentalis – 3-4*
*Salix X rubens* – 1*
*Salix exigua – 2-3*
*Sambucus canadensis – 3-4*
*Smilax ecirrhata – 1*
*Solidago canadensis – 4-5*
*Solidago gigantea – 2*
*Taraxacum officinale* – 4*
*Teucrium canadensis – 2-3*
*Thalictrum dasycarpum* v. *dasy.– 2*
*Toxicodendron radicans – 4*
*Tragopogon pratensis* – 3*
*Trifolium pratense* – 3*
*Trifolium repens* – 3*
*Ulmus americana – 3-4*
*Ulmus pumila* – 3*
*Verbascum thapsus* – 2-3*
*Verbena urticifolia – 2*
*Viburnum lentago – 1-2*
*Viola pratincola – 2-3*
*Vitis riparia – 5*

## LITERATURE CITED

Beal, W. J. 1870. A stroll along the beach of Lake Michigan. The American Naturalist 4(6):356-358.

Crins, W. J. 2002. *Carex* Linnaeus sect. *Ceratocystis in* Flora of North America North of Mexico. 23:523-528.

Deam, C. C. 1940. Flora of Indiana. Indianapolis: Indiana Department of Conservation.

Eggers, S. D. and D. M. Reed. 1987. Wetland plants and plant communities of Minnesota and Wisconsin. U. S. Army Corps of Engineers, St. Paul District.

Gleason, H. A. and A. Cronquist. 1991. Manual of vascular plants of the northeastern United States and adjacent Canada. 2nd Edition. New York: The New York Botanical Garden.

Herkert, J. R. 1994. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 3 – 1994 Changes to the Illinois List of Endangered and Threatened Species. Illinois Endangered Species Protection Board, Springfield, Illinois. 33 pp.

Herkert, J. R. and J. E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 – Plants. Illinois Endangered Species Protection Board, Springfield, Illinois. 161 pp.

Illinois Department of Natural Resources. 2007. Biological and conservation database system (BCD), Division of Natural Heritage, Office of Resource Conservation, Illinois Department of Natural Resources.

Illinois Nature Preserves Commission. |1970s|. Registry of endangered, threatened, vulnerable, and rare species of Illinois. Illinois Nature Preserves Commission, Rockford, Illinois. (Often referred to as the “registry cards”).

ILLS. 2007. Illinois Natural History Survey Herbarium (ILLS) Database. Database of collections in the herbarium of the Illinois Natural History Survey. Champaign, Illinois.

Jones, G. N. 1963. Flora of Illinois. 3rd ed. American Midland Naturalist Monograph No. 7. The University of Notre Dame Press, Notre Dame, Indiana.

Kartesz, J. T. 1994. A Synonymized Checklist of the Vascular Flora of the United States, Canada, and Greenland. Vol. 1 and 2, 2nd ed. Timber Press, Portland, Oregon.

Mohlenbrock, R. H. and D. M. Ladd. 1978. Distribution of Illinois vascular plants. Southern Illinois University Press. Carbondale, Illinois.

Mohlenbrock, R. H. 1981. The Illustrated Flora of Illinois. magnolias to pitcher plants. Southern Illinois University Press, Carbondale, Illinois.

Mohlenbrock, R. H. 1986. Guide to the vascular flora of Illinois, revised and enlarged edition. Southern Illinois University Press, Carbondale, Illinois.

Mohlenbrock, R. H. 1999. The Illustrated Flora of Illinois, Flowering Plants: sedges. Southern Illinois University Press, Carbondale, Illinois.

Murphy, M. J. C. 2005. Botanical survey and assessment of the Illinois Interstate-94 tollway improvement corridor in Cook and Lake Counties. Technical Report 2005(16). Center for Wildlife and Plant Ecology, Illinois Natural History Survey, Champaign, IL.

Murphy, M. J. C. 2006. Botanical survey and assessment of the Illinois Interstate-90 tollway improvement corridor in Cook and Kane Counties. Technical Report 2006(14). Division of Biodiversity and Ecological Entomology, Illinois Natural History Survey, Champaign, IL.

Natural Resources Conservation Service Plant Guide. No date. Alkali Bulrush [*Schoenoplectus maritimus* (L.) Lye]: located at USDA, NRCS. 2007. The PLANTS Database (http://plants.usda.gov). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

Nyboer, R. W. and J. E. Ebinger, editors. 2004. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 3: 2004 Changes to the Illinois List of Endangered and Threatened Plant Species. Illinois Endangered Species Protection Board, Springfield, Illinois. 34 pp.

Reed, P. B., Jr. 1988. National list of plant species that occur in wetlands: north central (region 3). U.S. Fish and Wildlife Service Biological Report 88(26.3).

Schwegman, J. E. 1973. Comprehensive plan for the Illinois Nature Preserves System. Part 2. The Natural Divisions of Illinois. Illinois Nature Preserves Commission, Rockford, Illinois.

Sheviak, C. J. 1981. Endangered and Threatened Plants. Pages 70-179 *in* M. L. Bowles, V. E. Diersing, and J. E. Ebinger, eds., Endangered and Threatened Vertebrate Animals and Vascular Plants of Illinois. Illinois Department of Conservation, Springfield.

Smith, G. S. 2002. *Bolboschoenus in* Flora of North America North of Mexico. 23:37-44.

Standley, L. A. 1989. Taxonomic revision of the *Carex stricta* (Cyperaceae) complex in Eastern North America. Canadian Journal of Botany 67:1-14.

Swink, F. 1969. Plants of the Chicago Region. The Morton Arboretum, Lisle, Illinois.

Swink, F. and G. Wilhelm. 1979. Plants of the Chicago region. Revised and expanded edition with keys. The Morton Arboretum, Lisle, Illinois.

Swink, F. and G. Wilhelm. 1994. Plants of the Chicago region, 4th ed. Indianapolis: Indiana Academy of Science.

Taft, J. B., G. S. Wilhelm, D. M. Ladd, and L. A. Masters. 1997. Floristic quality assessment for vegetation in Illinois. A method for assessing vegetation integrity. Erigenia 15:3-95.

USDA, NRCS. 2007. The PLANTS Database (http://plants.usda.gov, 30 November 2007). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

vPlants Database 2007. http://www.vplants.org

White, J. 1978. Illinois natural areas inventory technical report. Vol. 1. Survey methods and results. Illinois Natural Areas Inventory, Urbana. 426 pp.

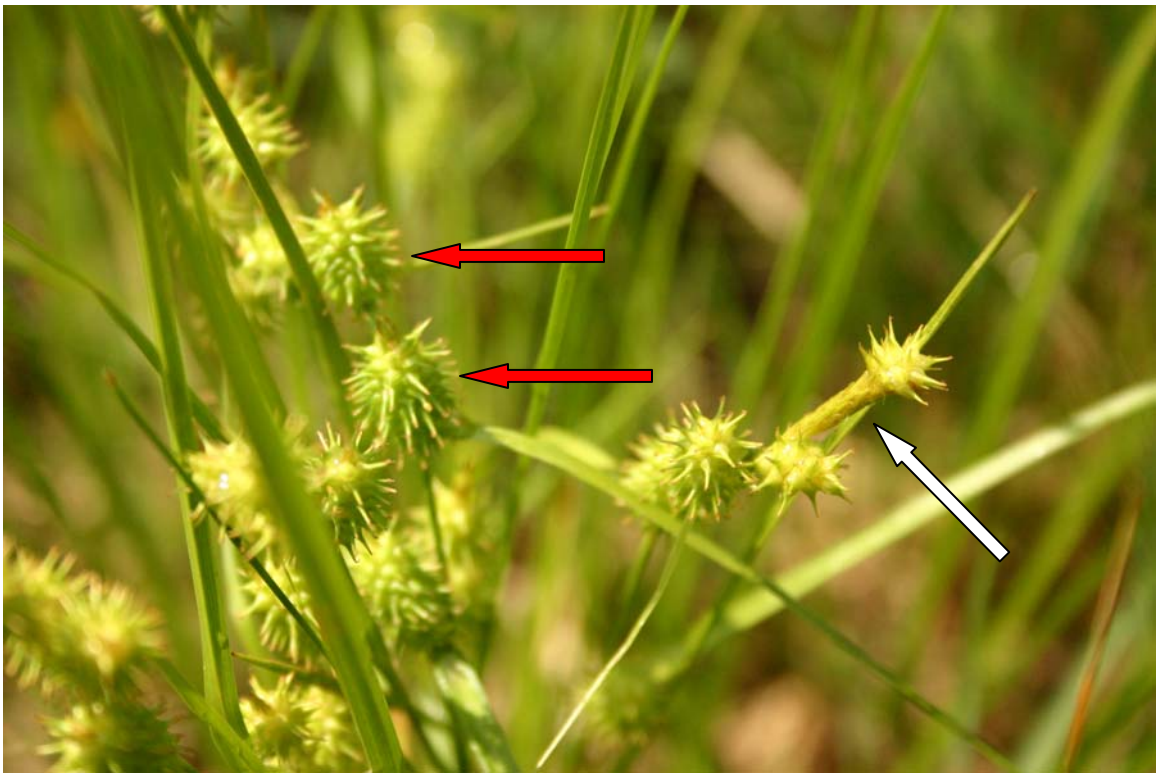
Whittemore, A. T. 1997. *Ranunculus in* Flora of North America North of Mexico. 3:88-135.

Wiggers, R. 1997. Geology underfoot in Illinois. Mountain Press Publishing. Missoula Montana. 303 pp.

Willman, H. B. and J. C. Frye. 1970. Pleistocene stratigraphy of Illinois. Illinois State Geological Survey Bulletin 94:1-204 + map.

**Figure 1.** A – Photograph of two *Carex cryptolepis* clumps occurring along the westbound lanes of I-90 (Kane County), showing the non-rhizomotous growth-form of this species. B – Close-up photograph of *C. cryptolepis* pistillate spikes (red arrows) and one staminate spike (white arrow).

**A.**



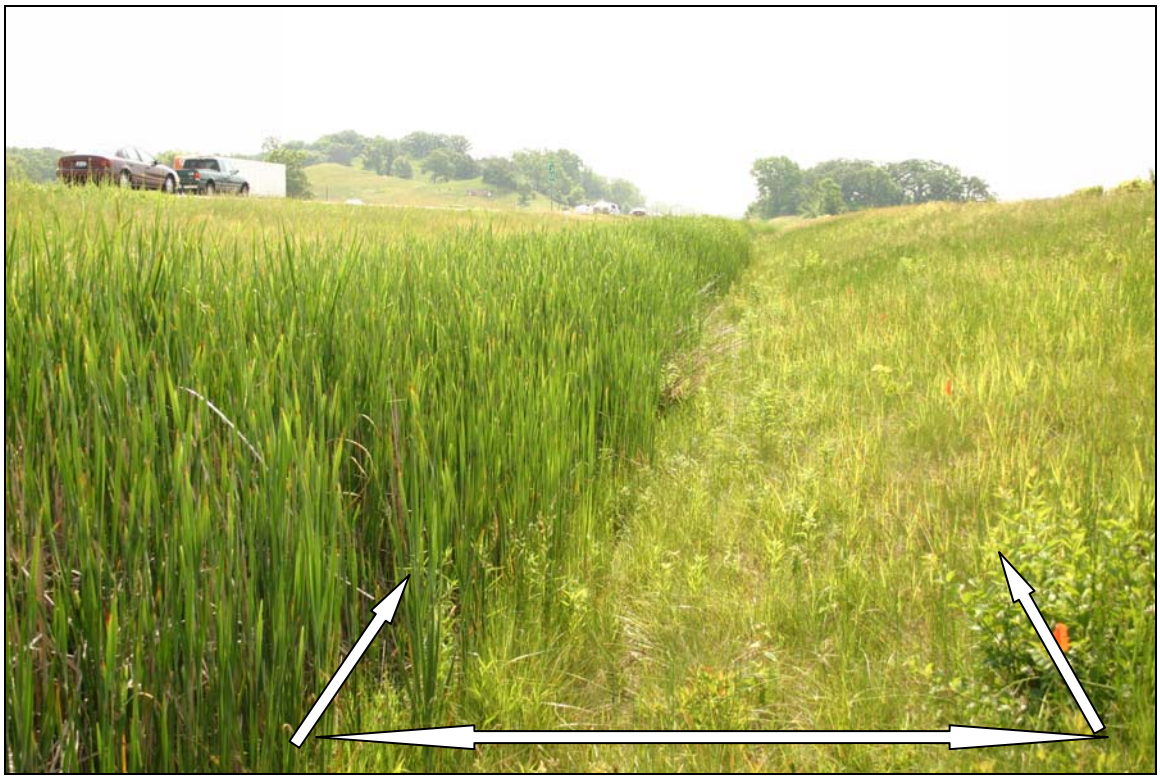
**B.**

**Figure 2.** A – Close-up photograph of one *Carex cryptolepis* clump occurring along the westbound lanes of I-90 (Kane County). B – Photograph showing closer view of *C. cryptolepis* fruiting stems.

**A.**

**B.**

**Figure 3.** Photograph showing roadside ditch habitats along I-90 (Kane County) where *Carex cryptolepis* populations were located during 2006 & 2007 botanical surveys. White arrows in both captions show the approximate width of the area where these populations occurred. A – Moist/wet ditch along eastbound lanes (facing east), where 337 individual clumps of *C. cryptolepis* were located. B – Roadside ditch along westbound lanes (facing east), where 320 individual clumps of *C. cryptolepis* were located.

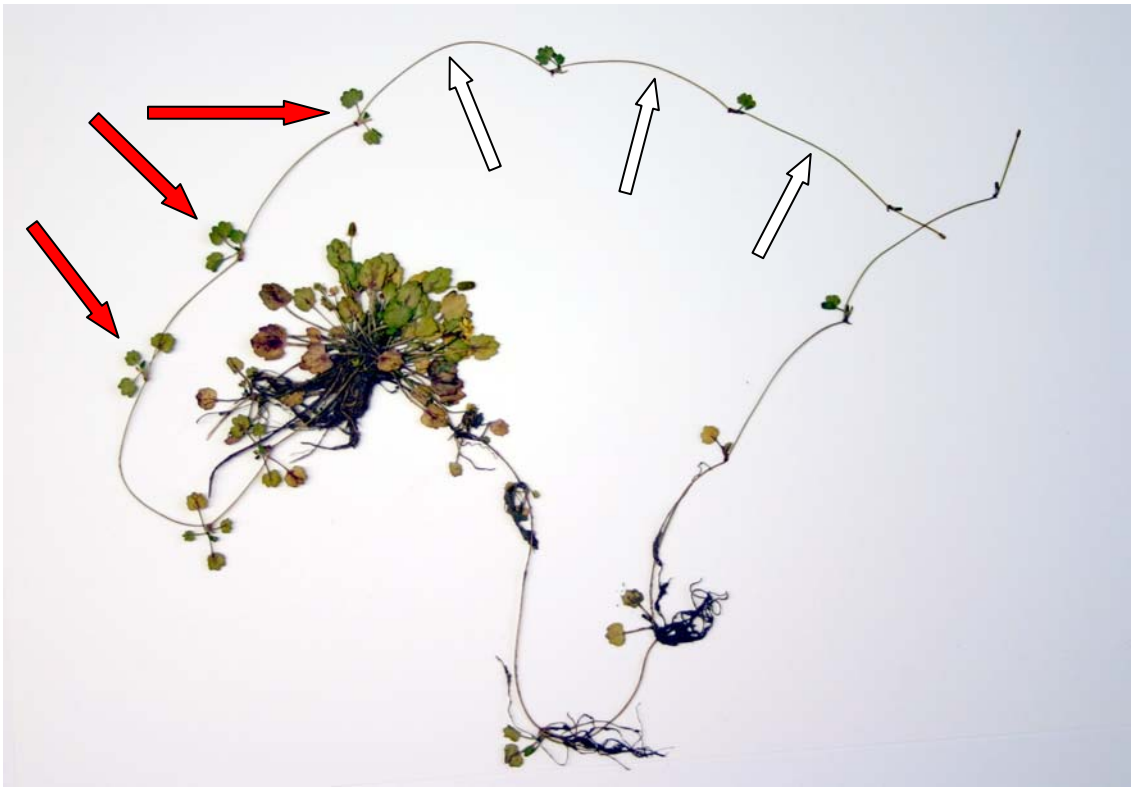


**A.**

**B.**

**Figure 4.** A – Close-up photograph of *Ranunculus cymbalaria* from a small colony occurring in a wet, roadside ditch just east of Harmony-Riley Rd., McHenry County. B – Photograph of *R. cymbalaria* voucher specimen (*Murphy #2032*) collected in a wet ditch east of the IL Rt. 20 overpass, Kane County. White arrows show the creeping, above-ground stems (stolons) characteristic of this species. Red arrows show the numerous, asexually produced ramets (genetically identical plants).

**A.**



**B.**

**Figure 5.** A – *Scirpus paludosus* colony occurring just west of IL Route 20 eastbound exit ramp (Kane Co.), growing with *Scirpus fluviatilis* and *Scirpus taberaemontanii* (white arrow indicates colony of *S. paludosus*). B – Close-up photograph of fruiting stems of *S. paludosus*, occurring just west of the IL Route 20 eastbound exit ramp (Kane Co.).

**A.**

**B.**

**Appendix 1.** Population parameters of eastbound I-90 *Carex cryptolepis* population. Distances represent five meter increments used to census the population, which began at the first individual clump (0 m - representing the western boundary), and continuing to the last individual clump (295 m - representing the eastern boundary).

| Distance (m) | # of genets | Fruiting stems | Distance (m) | # of genets | Fruiting stems | Distance (m) | # of genets | Fruiting stems |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 1 | 3 | 100-105 | 0 | 0 | 200-205 | 8 | 78 |
| 5-10 | 8 | 66 | 105-110 | 0 | 0 | 205-210 | 6 | 11 |
| 10-15 | 1 | 5 | 110-115 | 0 | 0 | 210-215 | 0 | 0 |
| 15-20 | 0 | 0 | 115-120 | 0 | 0 | 215-220 | 0 | 0 |
| 20-25 | 17 | 36 | 120-125 | 0 | 0 | 220-225 | 0 | 0 |
| 25-30 | 11 | 24 | 125-130 | 1 | 1 | 225-230 | 0 | 0 |
| 30-35 | 2 | 3 | 130-135 | 3 | 6 | 230-235 | 0 | 0 |
| 35-40 | 0 | 0 | 135-140 | 0 | 0 | 235-240 | 0 | 0 |
| 40-45 | 5 | 10 | 140-145 | 1 | 1 | 240-245 | 5 | 5 |
| 45-50 | 43 | 80 | 145-150 | 1 | 2 | 245-250 | 1 | 1 |
| 50-55 | 41 | 133 | 150-155 | 0 | 0 | 250-255 | 0 | 0 |
| 55-60 | 11 | 38 | 155-160 | 4 | 14 | 255-260 | 0 | 0 |
| 60-65 | 9 | 20 | 160-165 | 7 | 25 | 260-265 | 0 | 0 |
| 65-70 | 4 | 8 | 165-170 | 0 | 0 | 265-270 | 0 | 0 |
| 70-75 | 0 | 0 | 170-175 | 0 | 0 | 270-275 | 1 | 5 |
| 75-80 | 0 | 0 | 175-180 | 0 | 0 | 275-280 | 25 | 58 |
| 80-85 | 0 | 0 | 180-185 | 0 | 0 | 280-285 | 80 | 200 |
| 85-90 | 0 | 0 | 185-190 | 0 | 0 | 285-290 | 39 | 140 |
| 90-95 | 0 | 0 | 190-195 | 0 | 0 | 290-295 | 2 | 7 |
| 95-100 | 0 | 0 | 195-200 | 0 | 0 | - | - | - |
| **Totals** | **153** | **426** | **Totals** | **17** | **49** | **Totals** | **167** | **505** |

**337 Total genets (clumps)**
**980 Total fruiting stems**

**Appendix 2.** Population parameters of westbound I-90 *Carex cryptolepis* population. Distances represent five meter increments used to census the population, which began at the first individual clump (0 m - representing the eastern boundary), and continuing to the last individual clump (430 m - representing the western boundary).

| Distance (m) | # of clumps | Fruiting stems | Distance (m) | # of clumps | Fruiting stems | Distance (m) | # of clumps | Fruiting stems | Distance (m) | # of clumps | Fruiting stems |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0-5 | 35 | 166 | 110-115 | 0 | 0 | 220-225 | 0 | 0 | 330-335 | 12 | 33 |
| 5-10 | 11 | 34 | 115-120 | 1 | 1 | 225-230 | 0 | 0 | 335-340 | 2 | 4 |
| 10-15 | 26 | 93 | 120-125 | 3 | 15 | 230-235 | 0 | 0 | 340-345 | 11 | 24 |
| 15-20 | 15 | 36 | 125-130 | 0 | 0 | 235-240 | 0 | 0 | 345-350 | 1 | 1 |
| 20-25 | 1 | 1 | 130-135 | 1 | 2 | 240-245 | 4 | 62 | 350-355 | 29 | 56 |
| 25-30 | 0 | 0 | 135-140 | 6 | 41 | 245-250 | 0 | 0 | 355-360 | 6 | 26 |
| 30-35 | 0 | 0 | 140-145 | 13 | 77 | 250-255 | 0 | 0 | 360-365 | 1 | 1 |
| 35-40 | 0 | 0 | 145-150 | 15 | 188 | 255-260 | 0 | 0 | 365-370 | 2 | 17 |
| 40-45 | 0 | 0 | 150-155 | 18 | 234 | 260-265 | 2 | 16 | 370-375 | 0 | 0 |
| 45-50 | 0 | 0 | 155-160 | 1 | 8 | 265-270 | 0 | 0 | 375-380 | 0 | 0 |
| 50-55 | 0 | 0 | 160-165 | 15 | 70 | 270-275 | 0 | 0 | 380-385 | 0 | 0 |
| 55-60 | 0 | 0 | 165-170 | 6 | 25 | 275-280 | 0 | 0 | 385-390 | 0 | 0 |
| 60-65 | 0 | 0 | 170-175 | 10 | 118 | 280-285 | 0 | 0 | 390-395 | 0 | 0 |
| 65-70 | 0 | 0 | 175-180 | 0 | 0 | 285-290 | 0 | 0 | 395-400 | 0 | 0 |
| 70-75 | 0 | 0 | 180-185 | 0 | 0 | 290-295 | 0 | 0 | 400-405 | 0 | 0 |
| 75-80 | 0 | 0 | 185-190 | 0 | 0 | 295-300 | 0 | 0 | 405-410 | 0 | 0 |
| 80-85 | 0 | 0 | 190-195 | 0 | 0 | 300-305 | 0 | 0 | 410-415 | 0 | 0 |
| 85-90 | 0 | 0 | 195-200 | 4 | 125 | 305-310 | 0 | 0 | 415-420 | 1 | 2 |
| 90-95 | 0 | 0 | 200-205 | 41 | 480 | 310-315 | 0 | 0 | 420-425 | 1 | 2 |
| 95-100 | 0 | 0 | 205-210 | 11 | 143 | 315-320 | 0 | 0 | 425-430 | 5 | 33 |
| 100-105 | 0 | 0 | 210-215 | 0 | 0 | 320-325 | 2 | 17 | - | - | - |
| 105-110 | 0 | 0 | 215-220 | 8 | 83 | 325-330 | 0 | 0 | - | - | - |
| **Totals** | **88** | **330** | **Totals** | **153** | **1,610** | **Totals** | **8** | **95** | **Totals** | **71** | **199** |

**320 Total genets (clumps)**
**2,234 Total fruiting stems**

**Appendix 3.** Threatened and endangered species Element Occurrence Record for *Carex cryptolepis* , occurring on eastbound side of Interstate-90, Kane County, Illinois.

| | |
|---|---|
| **Taxon:** *Carex cryptolepis* Mack. | **Status:** State Endangered |
| **Project Area:** Interstate-90 tollway improvement corridor (eastbound lanes).<br>**Date:** 14 June 2007 | **County:** Kane |
| **Distance from Edge of Pavement:**<br>Ranging from 4 to 7 m from edge of pavement. | **Population Size:**<br>337 individual clumps (genets), with 980 fruiting culms. |

**Reproductive State:** Fruiting

**Latitude:** from 42.10745° N (western boundary) to 42.10632° N (eastern boundary)
**Longitude:** from -88.40254° W (western boundary) to -88.39935° W (eastern boundary) (WGS84/NAD83)
**Voucher:** Yes (*Murphy # 2119* - ILLS) **Photograph:** Yes

**Community Description:**

**Natural Community:** Cultural - Developed land (moist-wet, roadside ditch)

**Associate Species:** *Apocynum sibiricum, Asclepias incarnata, A. verticillata, Bidens vulgata, Carex bebbii, C. granularis, C. vulpinoidea, Coronilla varia, Erucastrum gallicum, Euthamia graminifolia, Festuca arundinacea, Juncus dudleyi, Leersia oryzoides, Lycopus americanus, Lythrum alatum, L. salicaria, Phalaris arundinacea, Rhamnus frangula, Scirpus pendulus, Solidago gigantea, Typha angustifolia, Verbena hastata,* and *Vitis riparia.*

**Comments:** Eastbound lanes of Interstate-90. Occurring along a ditch parallel to the interstate, in an area approximately 2 m in width, and 295 m in length. Individual clumps within this area were continuous to discontinuous, with large gaps sometimes occurring between groupings of plants.

**Appendix 4.** Threatened and endangered species Element Occurrence Record for *Carex cryptolepis* , occurring on westbound side of Interstate-90, Kane County, Illinois.

| | |
|---|---|
| **Taxon:** *Carex cryptolepis* Mack. | **Status:** State Endangered |
| **Project Area:** Interstate-90 tollway improvement corridor (westbound lanes).<br>**Date:** 7 June 2007 | **County:** Kane |
| **Distance from Edge of Pavement:**<br>Ranging from 4 to 7 m from edge of pavement. | **Population Size:**<br>320 individual clumps, with 2,234 fruiting culms. |

**Reproductive State:** Fruiting

**Latitude:** from 42.10635° N (eastern boundary) to 42.10796° N (western boundary)
**Longitude:** from -88.39759° W (eastern boundary) to -88.40234° W (western boundary) (WGS84/NAD83)
**Voucher:** Yes (*Murphy # 2079, #2316* - ILLS) **Photograph:** Yes

**Community Description:**

**Natural Community:** Cultural - Developed land (moist-wet roadside ditch)

**Associate Species:** *Apocynum sibiricum, Asclepias incarnata, A. verticillata, Bidens vulgata, Carex blanda, C. granularis, C. praegracilis, Coronilla varia, Cyperus ferruginescens, C. strigosus, Erucastrum gallicum, Festuca arundinacea, Hordeum jubatum, Juncus nodosus, Leersia oryzoides, Lycopus americanus, Lythrum alatum, L. salicaria, Phalaris arundinacea, Rhamnus frangula, Scirpus pendulus, Solidago gigantea, Typha angustifolia, Verbena hastata,* and *Vitis riparia.*

**Comments:** Westbound lanes of Interstate-90. Occurring along a ditch parallel to the interstate, in an area approximately 2-3 m in width, and 430 m in length. Individual clumps within this area were continuous to discontinuous, with large gaps sometimes occurring between groupings of plants.

**Appendix 5.** County, map number, location number, estimated number of rosettes and flowering/fruiting stems, and estimated area occupied by *Ranunculus cymbalaria* populations, in the western one-half of the I-90 tollway improvement corridor. Map numbers refer to attached digitized aerial photographs and location numbers are shown on corresponding maps.

| County | Map # | Location # | Estimated # of rosettes | County Totals | Estimated # of flowering/fruiting stems | County Totals | Estimated area occupied [ha] | County Totals |
|---|---|---|---|---|---|---|---|---|
| Kane | 1 | 1 | 600 | | 300 | | 0.065 | |
| Kane | 1 | 2 | 225 | | 400 | | 0.005 | |
| Kane | 1 | 3 | 250 | | 450 | | 0.002 | |
| Kane | 1 | 4 | 150 | | 45 | | 0.031 | |
| Kane | 1 | 5 | 500 | | 300 | | 0.017 | |
| Kane | 2 | 6 | 25,000 | | 8,000 | | 0.015 | |
| Kane | 2 | 7 | 50 | | 35 | | 0.009 | |
| Kane | 2 | 8 | 2,100 | 28,875 | 2,250 | 11,780 | 0.006 | 0.15 |
| McHenry | 3 | 9 | 6,000 | | 6,000 | | 0.058 | |
| McHenry | 3 | 10 | 550 | | 650 | | 0.006 | |
| McHenry | 3 | 11 | 250 | | 0 | | 0.015 | |
| McHenry | 3 | 12 | 14 | | 0 | | 0.003 | |
| McHenry | 3 | 13 | 150 | | 10 | | 0.004 | |
| McHenry | 3 | 14 | 2,500 | | 1,000 | | 0.06 | |
| McHenry | 3 | 15 | 550 | | 350 | | 0.009 | |
| McHenry | 3 | 16 | 8 | | 12 | | 0.001 | |
| McHenry | 3 | 17 | 25 | | 45 | | 0.001 | |
| McHenry | 3 | 18 | 6,000 | | 8,000 | | 0.007 | |
| McHenry | 3 | 19 | 100 | | 10 | | 0.001 | |
| McHenry | 3 | 20 | 75 | | 100 | | 0.002 | |
| McHenry | 3 | 21 | 250 | | 400 | | 0.002 | |
| McHenry | 3 | 22 | 450 | | 350 | | 0.002 | |
| McHenry | 3 | 23 | 40 | | 20 | | 0.002 | |
| McHenry | 3 | 24 | 100 | | 160 | | 0.002 | |
| McHenry | 3 | 25 | 250 | | 90 | | 0.001 | |
| McHenry | 3 | 26 | 130 | 17,442 | 75 | 17,272 | 0.005 | 0.181 |
| Boone | 4 | 27 | 300 | | 400 | | 0.004 | |
| Boone | 4 | 28 | 60 | 360 | 125 | 525 | 0.003 | 0.007 |
| Totals | | 28 | 46,677 | 46,677 | 29,577 | 29,577 | 0.338 | 0.338 |

**Appendix 6.** Threatened and endangered species Element Occurrence Record for *Ranunculus cymbalaria* , Boone County, Illinois.

| | |
|---|---|
| **Taxon:** *Ranunculus cymbalaria* Pursh | **Status:** State Endangered |
| **Project Area:** Interstate-90 tollway improvement corridor (eastbound lanes).<br>**Date:** 7 August 2007 | **County:** Boone |
| **Distance from Edge of Pavement:**<br>Approximately 2 m | **Population Size:**<br>50 to 75 rosettes with 100-150 flowering/fruiting stems |
| **Reproductive State:** Stems both flowering and fruiting | |
| **Latitude:** 42.22352° N<br>**Longitude:** 88.76025° W<br>(WGS84/NAD83) | |
| **Voucher:** Yes (*Murphy # 2380* - ILLS) | **Photograph:** No |

**Community Description:**

**Natural Community:** Cultural - Developed land (dry, gravelly, mowed roadside)

**Associate Species:** *Agropyron repens, Festuca arundinacea,* and *Hordeum jubatum.*

**Comments:** Occurring on dry, gravelly road shoulder where competition was reduced due to the rocky substrate, and to a lesser extent, mowing.

**Appendix 7.** Threatened and endangered species Element Occurrence Record for *Ranunculus cymbalaria* , Kane County, Illinois.

| | |
|---|---|
| **Taxon:** *Ranunculus cymbalaria* Pursh | **Status:** State Endangered |
| **Project Area:** Interstate-90 tollway improvement corridor (westbound lanes).<br>**Date:** 19 June 2007 | **County:** Kane |
| **Distance from Edge of Pavement:**<br>Approximately 4 to 5 m | **Population Size:**<br>Estimated 150 rosettes with 30-60 flowering/fruiting stems |

**Reproductive State:** Stems both flowering and fruiting

**Latitude:** from 42.13969° N (eastern boundary) to 42.13992° N (western boundary)
**Longitude:** from -88.49368° W (eastern boundary) to -88.49458° W (western boundary) (WGS84/NAD83)
**Voucher:** Yes (*Murphy # 2032* - ILLS) **Photograph:** No

**Community Description:**

**Natural Community:** Cultural - Developed land (moist/wet roadside ditch)

**Associate Species:** *Leptochloa acuminata, Phalaris arundinacea, Sonchus arvensis,* and *Typha angustifolia.*

**Comments:** Continuous to discontinuous linear population (see above coordinates) in wet, roadside ditch.

**Appendix 8.** Threatened and endangered species Element Occurrence Record for *Ranunculus cymbalaria* , McHenry County, Illinois.

| | |
|---|---|
| **Taxon:** *Ranunculus cymbalaria* Pursh | **Status:** State Endangered |
| **Project Area:** Interstate-90 tollway improvement corridor (westbound lanes).<br>**Date:** 21 June 2007 | **County:** McHenry |
| **Distance from Edge of Pavement:**<br>Approximately 4 to 5 m | **Population Size:**<br>20-30 rosettes with 10 flowering/fruiting stems |
| **Reproductive State:** Stems both flowering and fruiting<br><br>**Latitude:** 42.18144° N<br>**Longitude:** -88.62790° W<br>(WGS84/NAD83)<br>**Voucher:** Yes (*Murphy # 2165* - ILLS) | **Photograph:** No |

**Community Description:**

**Natural Community:** Cultural - Developed land (dry to moist, rocky, roadside ditch)

**Associate Species:** No associates.

**Comments:** None

**Appendix 9.** County, map number, location number, estimated number of flowering/fruiting stems, and estimated area occupied by *Scirpus paludosus* populations, in the western one-half of the I-90 tollway improvement corridor. Map numbers refer to attached digitized aerial photographs and grouping numbers are shown on corresponding maps.

| County | Map # | Location # | Estimated # of flowering stems | County Totals | Estimated area occupied [ha] | County Totals |
|---|---|---|---|---|---|---|
| Kane | 2 | 1 | 250 | | 0.002 | |
| Kane | 2 | 2 | 750 | 1,000 | 0.015 | 0.017 |
| McHenry | 2 | 3 | 500 | | 0.002 | |
| McHenry | 2 | 4 | 40 | | 0.002 | |
| McHenry | 3 | 5 | 300 | 840 | 0.003 | 0.007 |
| Boone | 4 | 6 | 75 | | 0.005 | |
| Boone | 4 | 7 | 250 | | 0.022 | |
| Boone | 5 | 8 | 400 | | 0.003 | |
| Boone | 5 | 9 | 450 | | 0.024 | |
| Boone | 5 | 10 | 90 | | 0.002 | |
| Boone | 5 | 11 | 3,500 | | 0.028 | |
| Boone | 5 | 12 | 70 | | 0.003 | |
| Boone | 5 | 13 | 100 | | 0.002 | |
| Boone | 5 | 14 | 25 | | 0.002 | |
| Boone | 5 | 15 | 50 | 5,010 | 0.003 | 0.094 |
| Totals | | 15 | 6,850 | 6,850 | 0.118 | 0.118 |

**Appendix 10.** Threatened and endangered species Element Occurrence Record for *Scirpus paludosus* , Boone County, Illinois.

| | |
|---|---|
| **Taxon:** *Scirpus paludosus* A. Nelson | **Status:** State Endangered |
| **Project Area:** Interstate-90 tollway improvement corridor (westbound lanes).<br>**Date:** 11 July 2007 | **County:** Boone |
| **Distance from Edge of Pavement:**<br>Approximately 3 to 5 m | **Population Size:**<br>200 to 300 flowering/fruiting stems |

**Reproductive State:** Flowering/fruiting

**Latitude:** from 42.21753° N (eastern boundary) to 42.21805° N (western boundary)
**Longitude:** from -88.74162° W (eastern boundary) to -88.74326° W (western boundary) (WGS84/NAD83)
**Voucher:** Yes (*Murphy # 2273* - ILLS) **Photograph:** No

**Community Description:**

**Natural Community:** Cultural - Developed land (roadside ditch)

**Associate Species:** *Agrostis alba* var. *palustris, Cirsium arvense, Festuca arundinacea, Hordeum jubatum, Sonchus arvensis,* and *Typha angustifolia.*

**Comments:** None

**Appendix 11.** Threatened and endangered species Element Occurrence Record for *Scirpus paludosus* , Kane County, Illinois.

| | |
|---|---|
| **Taxon:** *Scirpus paludosus* A. Nelson | **Status:** State Endangered |
| **Project Area:** Interstate-90 tollway improvement corridor (westbound lanes).<br>**Date:** 19 June 2007 | **County:** Kane |
| **Distance from Edge of Pavement:**<br>Approximately 4 to 5 m | **Population Size:**<br>Estimated 750 flowering/fruiting stems |

**Reproductive State:** Flowering/fruiting

**Latitude:** from 42.14550° N (eastern boundary) to 42.14604° N (western boundary)
**Longitude:** from -88.51680° W (eastern boundary) to -88.51868° W (western boundary) (WGS84/NAD83)
**Voucher:** Yes (*Murphy # 2130* - ILLS) **Photograph:** No

**Community Description:**

**Natural Community:** Cultural - Developed land (roadside ditch)

**Associate Species:** *Atriplex patula, Festuca arundinacea, Ranunculus cymbalaria, Scirpus acutus,* and *Suaeda depressa.*

**Comments:** None

**Appendix 12.** Threatened and endangered species Element Occurrence Record for *Scirpus paludosus* , McHenry County, Illinois.

| | |
|---|---|
| **Taxon:** *Scirpus paludosus* A. Nelson | **Status:** State Endangered |
| **Project Area:** Interstate-90 tollway improvement corridor (eastbound lanes).<br>**Date:** 9 August 2007 | **County:** McHenry |
| **Distance from Edge of Pavement:**<br>Approximately 15 to 20 m | **Population Size:**<br>Estimated 300 culms, with 100-120 of these in fruit - the remaining culms, sterile. |

**Reproductive State:** Sterile/fruiting

**Latitude:** from 42.17446° N
**Longitude:** from -88.60931° W
(WGS84/NAD83)
**Voucher:** No **Photograph:** No

**Community Description:**

**Natural Community:** Cultural - Developed land (moist/wet roadside ditch)

**Associate Species:** *Agropyron repens, Atriplex patula, Festuca arundinacea, Hordeum jubatum, Rumex crispus,* and *Typha angustifolia.*

**Comments:** None

**Appendix 13.** Floristic quality assessment of vascular plant taxa occurring in remnant marsh/sedge meadow along a wet drainage ditch, just east of the Kishwaukee River (Map 6). Abbreviations are as follows: **FQI** = floristic quality index; **Freq.** = frequency of occurrence: 1 = rare, 2 = infrequent, 3 = occasional, 4 = frequent, 5 = very frequent; **C** = coefficient of conservatism; **W** = numeric wetness values associated with wetland categories (see end of appendix); **Wetness** = wetland classification category (see end of appendix); **Origin** = native (Nt) or Adventive (Ad) to the region; **Physiog.** = physiognomy (combination of structural attributes, life history and taxonomic classification). Single letter prefixes accompanying Forb, Grass, Sedge or Vine classifications are as follows: A = annual, H= herbaceous, P = perennial, W = woody. Taxa with scientific names in all capital letters are adventive to the region.

| | | | | | |
|---|---|---|---|---|---|
| FLORISTIC QUALITY DATA | Native | 71 | 82.6% | Adventive | 15 | 17.4% |
| 71 NATIVE SPECIES | Tree | 0 | 0.0% | Tree | 0 | 0.0% |
| 86 Total Species | Shrub | 1 | 1.2% | Shrub | 1 | 1.2% |
| 4.3 NATIVE MEAN C | W-Vine | 1 | 1.2% | W-Vine | 1 | 1.2% |
| 3.6 W/Adventives | H-Vine | 0 | 0.0% | H-Vine | 0 | 0.0% |
| 36.4 NATIVE FQI | P-Forb | 47 | 54.7% | P-Forb | 7 | 8.1% |
| 33.1 W/Adventives | B-Forb | 2 | 2.3% | B-Forb | 2 | 2.3% |
| -3.5 NATIVE MEAN W | A-Forb | 5 | 5.8% | A-Forb | 1 | 1.2% |
| -2.8 W/Adventives | P-Grass | 5 | 5.8% | P-Grass | 3 | 3.5% |
| AVG: Fac. Wetland | A-Grass | 0 | 0.0% | A-Grass | 0 | 0.0% |
| | P-Sedge | 9 | 10.5% | P-Sedge | 0 | 0.0% |
| | A-Sedge | 0 | 0.0% | A-Sedge | 0 | 0.0% |
| | Fern | 1 | 1.2% | | | |

| Freq. | C | Scientific Name | W | Wetness | Origin | Physiog. | Common Name |
|---|---|---|---|---|---|---|---|
| 2-3 | 0 | Agrostis alba | -3 | FACW | Nt | P-Grass | RED TOP |
| 2-3 | 8 | Agrostis alba v. palustris | -3 | FACW | Nt | P-Grass | CREEPING BENT GRASS |
| 2-3 | 4 | Anemone canadensis | -3 | FACW | Nt | P-Forb | MEADOW ANEMONE |
| 3 | 6 | Angelica atropurpurea | -5 | OBL | Nt | P-Forb | ANGELICA |
| 2 | 4 | Asclepias incarnata | -5 | OBL | Nt | P-Forb | SWAMP MILKWEED |
| 3-4 | 0 | Asclepias syriaca | 5 | UPL | Nt | P-Forb | COMMON MILKWEED |
| 2-3 | 4 | Aster praealtus | -5 | OBL | Nt | P-Forb | WILLOW ASTER |
| 1-2 | 8 | Aster umbellatus | -3 | FACW | Nt | P-Forb | FLAT-TOP ASTER |
| 3 | 0 | BARBAREA VULGARIS | 0 | FAC | Ad | B-Forb | WINTER CRESS |
| 2 | 2 | Bidens cernua | -5 | OBL | Nt | A-Forb | NODDING BUR MARIGOLD |
| 3 | 1 | Bidens frondosa | -3 | FACW | Nt | A-Forb | COMMON BEGGAR'S TICKS |
| 2 | 3 | Boehmeria cylindrica | -5 | OBL | Nt | P-Forb | FALSE NETTLE |
| 4 | 1 | Calystegia sepium | 0 | FAC | Nt | P-Forb | AMERICAN BINDWEED |
| 2 | 8 | Campanula aparinoides | -5 | OBL | Nt | P-Forb | MARSH BELLFLOWER |
| 2-3 | 8 | Carex bebbii | -5 | OBL | Nt | P-Sedge | BEBB'S OVAL SEDGE |
| 2-3 | 7 | Carex haydenii | -5 | OBL | Nt | P-Sedge | LONG-SCALED TUSSOCK SEDGE |
| 4-5 | 6 | Carex hystericina | -5 | OBL | Nt | P-Sedge | PORCUPINE SEDGE |
| 2-3 | 4 | Carex lanuginosa | -5 | OBL | Nt | P-Sedge | WOOLY SEDGE |
| 4-5 | 5 | Carex stricta | -5 | OBL | Nt | P-Sedge | COMMON TUSSOCK SEDGE |
| 3 | 3 | Carex vulpinoidea | -5 | OBL | Nt | P-Sedge | BROWN FOX SEDGE |
| 2 | 7 | Chelone glabra | -5 | OBL | Nt | P-Forb | WHITE TURTLEHEAD |
| 3-4 | 9 | Cicuta bulbifera | -5 | OBL | Nt | P-Forb | BULBLET-BEARING WATER HEMLOCK |
| 2 | 0 | CIRSIUM ARVENSE | 3 | FACU | Ad | P-Forb | FIELD THISTLE |
| 2 | 4 | Cornus obliqua | -5 | OBL | Nt | Shrub | PALE DOGWOOD |
| 3 | 0 | DAUCUS CAROTA | 4 | FACU- | Ad | B-Forb | QUEEN ANNE'S LACE |
| 2-3 | 0 | ELAEAGNUS UMBELLATA | 5 | UPL | Ad | Shrub | AUTUMN OLIVE |
| 3 | 5 | Elodea canadensis | -5 | OBL | Nt | P-Forb | COMMON WATERWEED |
| 2 | 3 | Epilobium coloratum | -5 | OBL | Nt | P-Forb | CINNAMON WILLOW HERB |
| 3 | 0 | Equisetum arvense | 0 | FAC | Nt | Fern | COMMON HORSETAIL |

**Appendix 13 continued**

| Freq. | C | Scientific Name | W | Wetness | Origin | Physiog. | Common Name |
|---|---|---|---|---|---|---|---|
| 2 | 5 | Eupatorium maculatum | -5 | OBL | Nt | P-Forb | SPOTTED JOE PYE WEED |
| 2-3 | 4 | Eupatorium perfoliatum | -4 | FACW+ | Nt | P-Forb | COMMON BONESET |
| 3 | 0 | FESTUCA ARUNDINACEA | 2 | FACU+ | Ad | P-Grass | TALL FESCUE |
| 2-3 | 10 | Galium trifidum | -4 | FACW+ | Nt | P-Forb | SMALL BEDSTRAW |
| 1-2 | 2 | Gaura biennis | 4 | FACU- | Nt | B-Forb | BIENNIAL GAURA |
| 2 | 4 | Glyceria striata | -5 | OBL | Nt | P-Grass | FOWL MANNA GRASS |
| 2 | 3 | Helenium autumnale | -4 | FACW+ | Nt | P-Forb | SNEEZEWEED |
| 3 | 2 | Helianthus grosseserratus | -2 | FACW- | Nt | P-Forb | SAWTOOTH SUNFLOWER |
| 3-4 | 5 | Hypericum sphaerocarpum | 3 | FACU | Nt | P-Forb | ROUND-FRUITED ST. JOHN'S WORT |
| 3-4 | 2 | Impatiens capensis | -3 | FACW | Nt | A-Forb | SPOTTED TOUCH-ME-NOT |
| 4 | 4 | Juncus dudleyi | 0 | FAC | Nt | P-Forb | DUDLEY'S RUSH |
| 3 | 6 | Juncus nodosus | -5 | OBL | Nt | P-Forb | JOINT RUSH |
| 3 | 3 | Juncus torreyi | -3 | FACW | Nt | P-Forb | TORREY'S RUSH |
| 2 | 6 | Lathyrus palustris v. myrtifolius | -5 | OBL | Nt | P-Forb | MARSH VETCHLING |
| 2-3 | 3 | Leersia oryzoides | -5 | OBL | Nt | P-Grass | RICE CUT GRASS |
| 4 | 3 | Lemna minor | -5 | OBL | Nt | A-Forb | SMALL DUCKWEED |
| 1-2 | 6 | Lilium michiganense | -1 | FAC+ | Nt | P-Forb | MICHIGAN LILY |
| 2 | 4 | Lobelia siphilitica | -4 | FACW+ | Nt | P-Forb | GREAT BLUE LOBELIA |
| 3 | 4 | Ludwigia palustris v. americana | -5 | OBL | Nt | P-Forb | MARSH PURSLANE |
| 3 | 3 | Lycopus americanus | -5 | OBL | Nt | P-Forb | COMMON WATER HOREHOUND |
| 2 | 7 | Lycopus cf. virginicus (sterile) | -5 | OBL | Nt | P-Forb | NOTHERN BUGLE WEED |
| 2 | 4 | Lysimachia ciliata | -3 | FACW | Nt | P-Forb | FRINGED LOOSESTRIFE |
| 1-2 | 0 | LYTHRUM SALICARIA | -5 | OBL | Ad | P-Forb | PURPLE LOOSESTRIFE |
| 3 | 4 | Mentha arvensis v. villosa | -3 | FACW | Nt | P-Forb | WILD MINT |
| 2-3 | 4 | Monarda fistulosa | 3 | FACW | Nt | P-Forb | WILD BERGAMONT |
| 3-4 | 1 | Oenothera biennis | 3 | FACU | Nt | B-Forb | COMMON EVENING PRIMROSE |
| 3-4 | 0 | PHALARIS ARUNDINACEA | -4 | FACW+ | Ad | P-Grass | REED CANARY GRASS |
| 2 | 1 | Phyla lanceolata | -5 | OBL | Nt | P-Forb | FOG FRUIT |
| 2 | 6 | Physostegia virginiana | -3 | FACW | Nt | P-Forb | OBEDIENT PLANT |
| 2-3 | 0 | POA PRATENSIS | 1 | FAC- | Ad | P-Grass | KENTUCKY BLUE GRASS |
| 3 | 3 | Polygonum amphibium | -5 | OBL | Nt | P-Forb | WATER KNOTWEED |
| 2 | 0 | POTAMOGETON CRISPUS | -5 | OBL | Ad | P-Forb | BEGINNER'S PONDWEED |
| 2-3 | 7 | Potamogeton pusillus | -5 | OBL | Nt | P-Forb | BABY PONDWEED |
| 2-3 | 5 | Pycnanthemum virginianum | -4 | FACW+ | Nt | P-Forb | COMMON MOUNTAIN MINT |
| 2 | 3 | Ranunculus sceleratus | -5 | OBL | Nt | A-Forb | CURSED CROWFOOT |
| 2-3 | 0 | RUMEX CRISPUS | -1 | FAC+ | Ad | P-Forb | CURLY DOCK |
| 3-4 | 4 | Sagittaria latifolia | -5 | OBL | Nt | P-Forb | COMMON ARROWHEAD |
| 2-3 | 0 | SAPONARIA OFFICINALIS | 3 | FACU | Ad | P-Forb | BOUNCING BET |
| 2-3 | 6 | Scirpus acutus | -5 | OBL | Nt | P-Sedge | HEARD-STEMMED BULRUSH |
| 2-3 | 4 | Scirpus atrovirens | -5 | OBL | Nt | P-Sedge | DARK GREEN RUSH |
| 2-3 | 4 | Scirpus tabernaemontanii | -5 | OBL | Nt | P-Sedge | GREAT BULRUSH |
| 2 | 4 | Scutellaria lateriflora | -5 | OBL | Nt | P-Forb | MAD-DOG SKULLCAP |
| 2-3 | 8 | Silene nivea | -3 | FACW | Nt | P-Forb | SNOWY CAMPION |
| 2 | 0 | SOLANUM DULCAMARA | 0 | FAC | Ad | W-Vine | BITTERSWEET NIGHTSHADE |
| 3 | 3 | Solidago gigantea | -3 | FACW | Nt | P-Forb | LATE GOLDENROD |
| 3 | 0 | SONCHUS ARVENSIS v. GLABRESCENS | 1 | FAC- | Ad | P-Forb | FIELD SOW THISTLE |
| 2 | 4 | Spartina pectinata | -4 | FACW+ | Nt | P-Grass | PRAIRIE CORD GRASS |

**Appendix 13 continued**

| Freq. | C | Scientific Name | W | Wetness | Origin | Physiog. | Common Name |
|---|---|---|---|---|---|---|---|
| 2 | 0 | SPERGULARIA MEDIA | 3 | FACU | Ad | A-Forb | SALT SPURREY |
| 2 | 5 | Stachys palustris | -5 | OBL | Nt | P-Forb | WOUNDWORT |
| 2 | 3 | Teucrium canadense v. virginicum | -2 | FACW- | Nt | P-Forb | AMERICAN GERMANDER |
| 3 | 5 | Thalictrum dasycarpum | -2 | FACW- | Nt | P-Forb | PURPLE MEADOW RUE |
| 3 | 5 | Thalictrum dasycarpum v. hypoglaucum | -2 | FACW- | Nt | P-Forb | SMOOTH MEADOW RUE |
| 2 | 0 | TYPHA ANGUSTIFOLIA | -5 | OBL | Ad | P-Forb | NARROW-LEAVED CATTAIL |
| 2-3 | 3 | Verbena hastata | -4 | FACW+ | Nt | P-Forb | BLUE VERVAIN |
| 3-4 | 7 | Veronica catenata | -5 | OBL | Nt | P-Forb | WATER SPEEDWELL |
| 3-4 | 2 | Vitis riparia | -2 | FACW- | Nt | W-Vine | RIVERBANK GRAPE |
| 3-4 | 8 | Zannichellia palustris | -5 | OBL | Nt | P-Forb | HORNED PONDWEED |

The average coefficient of conservatism ($\overline{C}$) and floristic quality index [FQI = (*I*)] were calculated for each site according to Taft et al. (1997), using the following formulae, respectively:

$$\overline{C} = \sum C / N$$

Where *C* is the coefficient of conservatism and *N* is the number of taxa; and:

$$\text{FQI } (I) = \overline{C}\,(\sqrt{N})$$

Where *I* is a weighted index of species richness, and is the arithmetic product of the average coefficient of conservatism ($\overline{C}$) and the square root of species richness ($\sqrt{N}$) of a given natural area.

Wetland classification categories follow Reed (1988) for Region 3. Further details are from Taft et al. (1997). Plants are placed within one of five wetland indicator categories: Obligate Wetland (OBL), Facultative Wetland (FACW), Facultative (FAC), Facultative Upland (FACU), and Upland (UPL). Within any of these five categories, a "+" indicates that a particular taxon has a greater tendency to occur in wetlands while a "-" indicates a lesser tendency. Following this, indicator status categories, in descending order of probability of occurrence in wetland habitat to upland habitat, would be:

| | |
|---|---|
| -5 Obligate Wetland | (OBL) |
| -4 Facultative Wetland + | (FACW+) |
| -3 Facultative Wetland | (FACW) |
| -2 Facultative Wetland - | (FACW-) |
| -1 Facultative + | (FAC+) |
| 0 Facultative | (FAC) |
| +1 Facultative - | (FAC-) |
| +2 Facultative Upland + | (FACU+) |
| +3 Facultative Upland | (FACU) |
| +4 Facultative Upland - | (FACU-) |
| +5 Upland | (UPL) |

**Appendix 14.** Cumulative list of vascular plant species encountered within the western one-half of the I-90 corridor, in Boone, Kane, McHenry, and Winnebago Counties, Illinois. Abbreviations are as follows: **C** = coefficient of conservatism; **W** = numeric wetness values associated with wetland categories (see end of appendix); **Wetness** = wetland classification category (see end of appendix); **Origin** = native (Nt) or Adventive (Ad) to the region; **Physiog.** = physiognomy (combination of structural attributes, life history and taxonomic classification). Single letter prefixes accompanying Forb, Grass, Sedge or Vine classifications are as follows: A = annual, H= herbaceous, P = perennial, W = woody. Taxa with scientific names in all capital letters are adventive to the region.

| C | Scientific Name | W | Wetness | Origin | Physiog. | Common Name |
|---|---|---|---|---|---|---|
| 0 | Acalypha rhomboidea | 3 | FACU | Nt | A-Forb | THREE-SEEDED MERCURY |
| 1 | Acer negundo | -2 | FACW- | Nt | Tree | BOXELDER |
| 1 | Acer saccharinum | -3 | FACW | Nt | Tree | SILVER MAPLE |
| 0 | ACHILLEA MILLEFOLIUM | 3 | FACU | Ad | P-Forb | COMMON MILFOIL |
| 3 | Agrimonia gryposepala | 2 | FACU+ | Nt | P-Forb | TALL AGRIMONY |
| 0 | AGROPYRON REPENS | 3 | FACU | Ad | P-Grass | QUACK GRASS |
| 0 | Agrostis alba | -3 | FACW | Nt | P-Grass | RED TOP |
| 8 | Agrostis alba v. palustris | -3 | FACW | Nt | P-Grass | CREEPING BENT GRASS |
| 2 | Alisma plantago-aquatica v. americanum | -5 | OBL | Nt | P-Forb | AMERICAN WATER PLANTAIN |
| 0 | ALLIARIA PETIOLATA | 0 | FAC | Ad | B-Forb | GARLIC MUSTARD |
| 2 | Allium canadense | 3 | FACU | Nt | P-Forb | WILD GARLIC |
| 0 | Ambrosia artemisiifolia | 3 | FACU | Nt | A-Forb | COMMON RAGWEED |
| 0 | Ambrosia trifida | -1 | FAC+ | Nt | A-Forb | GIANT RAGWEED |
| 5 | Andropogon gerardii | 1 | FAC- | Nt | P-Grass | BIG BLUESTEM |
| 4 | Anemone canadensis | -3 | FACW | Nt | P-Forb | MEADOW ANEMONE |
| 7 | Anemone quinquefolia | 0 | FAC | Nt | P-Forb | WOOD ANEMONE |
| 4 | Anemone virginiana | 5 | UPL | Nt | P-Forb | TALL ANEMONE |
| 6 | Angelica atropurpurea | -5 | OBL | Nt | P-Forb | ANGELICA |
| 0 | ANTHRISCUS SYLVESTRIS | 5 | UPL | Ad | B-Forb | FALSE CHERVIL |
| 2 | Apocynum sibiricum | -1 | FAC+ | Nt | P-Forb | INDIAN HEMP |
| 0 | ARCTIUM MINUS | 5 | UPL | Ad | B-Forb | COMMON BURDOCK |
| 4 | Arisaema triphyllum | -2 | FACW- | Nt | P-Forb | INDIAN TURNIP |
| 0 | ARTEMISIA VULGARIS | 5 | UPL | Ad | P-Forb | MUGWORT |
| 5 | Asarum canadense | 5 | UPL | Nt | P-Forb | CANADA WILD GINGER |
| 4 | Asclepias incarnata | -5 | OBL | Nt | P-Forb | SWAMP MILKWEED |
| 0 | Asclepias syriaca | 5 | UPL | Nt | P-Forb | COMMON MILKWEED |
| 1 | Asclepias verticillata | 5 | UPL | Nt | P-Forb | HORSETAIL MILKWEED |
| 0 | ASPARAGUS OFFICINALIS | 3 | FACU | Ad | P-Forb | GARDEN ASPARAGUS |
| 4 | Aster ericoides | 4 | FACU- | Nt | P-Forb | HEATH ASTER |
| 2 | Aster lateriflorus | -2 | FACW- | Nt | P-Forb | SIDE-FLOWERING ASTER |
| 4 | Aster novae-angliae | -3 | FACW | Nt | P-Forb | NEW ENGLAND ASTER |
| 4 | Aster ontarionis | 0 | FAC | Nt | P-Forb | ONTARIO ASTER |
| 0 | Aster pilosus | 4 | FACU- | Nt | P-Forb | HAIRY ASTER |
| 4 | Aster praealtus | -5 | OBL | Nt | P-Forb | WILLOW ASTER |
| 3 | Aster simplex | -5 | OBL | Nt | P-Forb | PANICLED ASTER |
| 0 | ASTER SUBULATUS | -5 | OBL | Ad | A-Forb | EXPRESSWAY ASTER |
| 8 | Aster umbellatus | -3 | FACW | Nt | P-Forb | FLAT-TOP ASTER |
| 0 | ATRIPLEX PATULA | 2 | FACU+ | Ad | A-Forb | FAT-HEN SALTBUSH |
| 0 | BARBAREA VULGARIS | 0 | FAC | Ad | B-Forb | WINTER CRESS |
| 2 | Bidens cernua | -5 | OBL | Nt | A-Forb | NODDING BUR MARIGOLD |
| 1 | Bidens frondosa | -3 | FACW | Nt | A-Forb | COMMON BEGGAR'S TICKS |

**Appendix 14 continued**

| C | Scientific Name | W | Wetness | Origin | Physiog. | Common Name |
|---|---|---|---|---|---|---|
| 5 | Blephilia hirsuta | 4 | FACU- | Nt | P-Forb | WOOD MINT |
| 3 | Boehmeria cylindrica | -5 | OBL | Nt | P-Forb | FALSE NETTLE |
| 0 | BRASSICA NIGRA | 5 | UPL | Ad | A-Forb | BLACK MUSTARD |
| 0 | BROMUS INERMIS | 5 | UPL | Ad | P-Grass | HUNGARIAN BROME |
| 1 | Calystegia sepium | 0 | FAC | Nt | P-Forb | AMERICAN BINDWEED |
| 4 | Campanula americana | 0 | FAC | Nt | A-Forb | AMERICAN BELLFLOWER |
| 8 | Campanula aparinoides | -5 | OBL | Nt | P-Forb | MARSH BELLFLOWER |
| 0 | CARDUUS NUTANS | 5 | UPL | Ad | B-Forb | MUSK BRISTLE THISTLE |
| 4 | Carex aggregata | 5 | UPL | Nt | P-Sedge | SMOOTH CLUSTERED SEDGE |
| 8 | Carex bebbii | -5 | OBL | Nt | P-Sedge | BEBB'S OVAL SEDGE |
| 2 | Carex blanda | 0 | FAC | Nt | P-Sedge | COMMON WOOD SEDGE |
| 3 | Carex cephalophora | 3 | FACU | Nt | P-Sedge | SHORT-HEADED BRACTED SEDGE |
| 3 | Carex cristatella | -4 | FACW+ | Nt | P-Sedge | CRESTED OVAL SEDGE |
| 6 | Carex festucacea | 0 | FAC | Nt | P-Sedge | FESCUE OVAL SEDGE |
| 2 | Carex granularis | -4 | FACW+ | Nt | P-Sedge | PALE SEDGE |
| 4 | Carex gravida | 5 | UPL | Nt | P-Sedge | LONG-AWNED BRACTED SEDGE |
| 3 | Carex grisea | 5 | UPL | Nt | P-Sedge | WOOD GRAY SEDGE |
| 7 | Carex haydenii | -5 | OBL | Nt | P-Sedge | LONG-SCALED TUSSOCK SEDGE |
| 6 | Carex hystericina | -5 | OBL | Nt | P-Sedge | PORCUPINE SEDGE |
| 4 | Carex jamesii | 5 | UPL | Nt | P-Sedge | GRASS SEDGE |
| 4 | Carex lanuginosa | -5 | OBL | Nt | P-Sedge | WOOLY SEDGE |
| 2 | Carex molesta | 0 | FAC | Nt | P-Sedge | FIELD OVAL SEDGE |
| 4 | Carex normalis | -3 | FACW | Nt | P-Sedge | SPREADING OVAL SEDGE |
| 5 | Carex pensylvanica | 5 | UPL | Nt | P-Sedge | PENNSYLVANIA OAK SEDGE |
| 0 | CAREX PRAEGRACILIS | -3 | FACW | Ad | P-Sedge | EXPRESSWAY SEDGE |
| 0 | CAREX SPICATA | -5 | OBL | Ad | P-Sedge | SPIKED BRACTED SEDGE |
| 5 | Carex stricta | -5 | OBL | Nt | P-Sedge | COMMON TUSSOCK SEDGE |
| 3 | Carex vulpinoidea | -5 | OBL | Nt | P-Sedge | BROWN FOX SEDGE |
| 4 | Carya cordiformis | 0 | FAC | Nt | Tree | BITTERNUT HICKORY |
| 4 | Carya ovata | 3 | FACU | Nt | Tree | SHAGBARK HICKORY |
| 3 | Celtis occidentalis | 1 | FAC- | Nt | Tree | HACKBERRY |
| 0 | CENTAUREA MACULOSA | 5 | UPL | Ad | B-Forb | SPOTTED CENTAUREA |
| 0 | CERASTIUM VULGATUM | 3 | FACU | Ad | P-Forb | COMMON MOUSE-EAR CHICKWEED |
| 0 | CHELIDONIUM MAJUS | 5 | UPL | Ad | B-Forb | CELANDINE |
| 7 | Chelone glabra | -5 | OBL | Nt | P-Forb | WHITE TURTLEHEAD |
| 0 | CHENOPODIUM ALBUM | 1 | FAC- | Ad | A-Forb | LAMB'S QUARTERS |
| 0 | CICHORIUM INTYBUS | 5 | UPL | Ad | P-Forb | CHICKORY |
| 9 | Cicuta bulbifera | -5 | OBL | Nt | P-Forb | BULBLET-BEARING WATER HEMLOCK |
| 2 | Circaea lutetiana v. canadensis | 3 | FACU | Nt | P-Forb | ENCHANTER'S NIGHTSHADE |
| 0 | CIRSIUM ARVENSE | 3 | FACU | Ad | P-Forb | FIELD THISTLE |
| 3 | Cirsium discolor | 5 | UPL | Nt | B-Forb | PASTURE THISTLE |
| 0 | CIRSIUM VULGARE | 4 | FACU- | Ad | B-Forb | BULL THISTLE |
| 0 | CONVOLVULUS ARVENSIS | 5 | UPL | Ad | P-Forb | FIELD BINDWEED |
| 2 | Cornus drummondii | 0 | FAC | Nt | Shrub | ROUGH-LEAVED DOGWOOD |
| 4 | Cornus obliqua | -5 | OBL | Nt | Shrub | PALE DOGWOOD |
| 2 | Cornus racemosa | -2 | FACW- | Nt | Shrub | GRAY DOGWOOD |
| 4 | Cornus stolonifera | -3 | FACW | Nt | Shrub | RED OSIER DOGWOOD |
| 0 | CORONILLA VARIA | 5 | UPL | Ad | P-Forb | CROWN VETCH |

**Appendix 14 continued**

| C | Scientific Name | W | Wetness | Origin | Physiog. | Common Name |
|---|---|---|---|---|---|---|
| 5 | Crataegus coccinea | 5 | UPL | Nt | Tree | SCARLET HAWTHORN |
| 2 | Crataegus mollis | -2 | FACW- | Nt | Tree | DOWNY HAWTHORN |
| 2 | Cuscuta cf. gronovii (sterile) | -3 | FACW | Nt | A-Forb | COMMON DODDER |
| 0 | Cyperus esculentus | -3 | FACW | Nt | P-Sedge | FIELD NUT SEDGE |
| 0 | DACTYLIS GLOMERATA | 3 | FACU | Ad | P-Grass | ORCHARD GRASS |
| 0 | DAUCUS CAROTA | 4 | FACU- | Ad | B-Forb | QUEEN ANNE'S LACE |
| 4 | Dentaria laciniata | 4 | FACU | Nt | P-Forb | TOOTHWORT |
| 0 | DIPSACUS LACINIATUS | 5 | UPL | Ad | B-Forb | CUT-LEAVED TEASEL |
| 6 | Dodecatheon meadia | 3 | FACU | Nt | P-Forb | SHOOTING STAR |
| 0 | DYSSODIA PAPPOSA | 5 | UPL | Ad | A-Forb | FETID MARIGOLD |
| 0 | ECHINOCHLOA CRUSGALLI | -3 | FACW | Ad | A-Grass | BARNYARD GRASS |
| 4 | Echinocystis lobata | -2 | FACW- | Nt | H-Vine | WILD CUCUMBER |
| 2 | Eclipta prostrata | -3 | FACW | Nt | A-Forb | YERBA DE TAJO |
| 0 | ELAEAGNUS UMBELLATA | 5 | UPL | Ad | Shrub | AUTUMN OLIVE |
| 3 | Eleocharis erythropoda | -5 | OBL | Nt | P-Sedge | RED-ROOTED SPIKE RUSH |
| 5 | Elodea canadensis | -5 | OBL | Nt | P-Forb | COMMON WATERWEED |
| 4 | Elymus virginicus | -2 | FACW- | Nt | P-Grass | VIRGINIA WILD RYE |
| 3 | Epilobium coloratum | -5 | OBL | Nt | P-Forb | CINNAMON WILLOW HERB |
| 0 | Equisetum arvense | 0 | FAC | Nt | Fern | COMMON HORSETAIL |
| 2 | Equisetum hyemale affine | -2 | FACW- | Nt | Fern | TALL SCOURING RUSH |
| 1 | Erigeron annuus | 1 | FAC- | Nt | B-Forb | ANNUAL FLEABANE |
| 3 | Erigeron philadelphicus | -3 | FACW | Nt | P-Forb | MARSH FLEABANE |
| 0 | ERYSIMUM CHEIRANTHOIDES | 3 | FACU | Ad | A-Forb | WORMSEED MUSTARD |
| 4 | Erythronium albidum | 5 | UPL | Nt | P-Forb | WHITE ADDER'S TONGUE |
| 2 | Eupatorium altissimum | 3 | FACU | Nt | P-Forb | TALL BONESET |
| 5 | Eupatorium maculatum | -5 | OBL | Nt | P-Forb | SPOTTED JOE PYE WEED |
| 4 | Eupatorium perfoliatum | -4 | FACW+ | Nt | P-Forb | COMMON BONESET |
| 2 | Eupatorium rugosum | 3 | FACU | Nt | P-Forb | WHITE SNAKEROOT |
| 1 | Eupatorium serotinum | -1 | FAC+ | Nt | P-Forb | LATE BONESET |
| 3 | Euphorbia corollata | 5 | UPL | Nt | P-Forb | FLOWERING SPURGE |
| 3 | Euthamia graminifolia | -2 | FACW- | Nt | P-Forb | GRASS-LEAVED GOLDENROD |
| 0 | FESTUCA ARUNDINACEA | 2 | FACU+ | Ad | P-Grass | TALL FESCUE |
| 5 | Festuca obtusa | 2 | FACU+ | Nt | P-Grass | NODDING FESCUE |
| 0 | FESTUCA RUBRA | 1 | FAC- | Ad | P-Grass | RED FESCUE |
| 4 | Fraxinus americana | 3 | FACU | Nt | Tree | WHITE ASH |
| 2 | Fraxinus pennsylvanica v. subintegerrima | -3 | FACW | Nt | Tree | GREEN ASH |
| 0 | Galium aparine | 3 | FACU | Nt | A-Forb | ANNUAL BEDSTRAW |
| 10 | Galium trifidum | -4 | FACW+ | Nt | P-Forb | SMALL BEDSTRAW |
| 2 | Gaura biennis | 4 | FACU- | Nt | B-Forb | BIENNIAL GAURA |
| 4 | Geranium maculatum | 3 | FACU | Nt | P-Forb | WILD GERANIUM |
| 6 | Geum aleppicum | -1 | FAC+ | Nt | P-Forb | YELLOW AVENS |
| 2 | Geum canadense | 0 | FAC | Nt | P-Forb | WHITE AVENS |
| 2 | Geum laciniatum | -3 | FACW | Nt | P-Forb | ROUGH AVENS |
| 0 | GLECHOMA HEDERACEA | 3 | FACU | Ad | P-Forb | GROUND IVY |
| 2 | Gleditsia triacanthos | 0 | FAC | Nt | Tree | HONEY LOCUST |
| 4 | Glyceria striata | -5 | OBL | Nt | P-Grass | FOWL MANNA GRASS |
| 1 | Hackelia virginiana | 1 | FAC- | Nt | P-Forb | STICKSEED |
| 3 | Helenium autumnale | -4 | FACW+ | Nt | P-Forb | SNEEZEWEED |

**Appendix 14 continued**

| C | Scientific Name | W | Wetness | Origin | Physiog. | Common Name |
|---|---|---|---|---|---|---|
| 2 | Helianthus grosseserratus | -2 | FACW- | Nt | P-Forb | SAWTOOTH SUNFLOWER |
| 6 | Helianthus rigidus | 5 | UPL | Nt | P-Forb | PRAIRIE SUNFLOWER |
| 0 | HESPERIS MATRONALIS | 5 | UPL | Ad | P-Forb | DAME'S ROCKET |
| 0 | HORDEUM JUBATUM | -1 | FAC+ | Ad | P-Grass | SQUIRREL-TAIL GRASS |
| 0 | HYPERICUM PERFORATUM | 5 | UPL | Ad | P-Forb | COMMON ST. JOHN'S WORT |
| 5 | Hypericum sphaerocarpum | 3 | FACU | Nt | P-Forb | ROUND-FRUITED ST. JOHN'S WORT |
| 2 | Impatiens capensis | -3 | FACW | Nt | A-Forb | SPOTTED TOUCH-ME-NOT |
| 5 | Iris cf. shrevei (sterile) | -5 | OBL | Nt | P-Forb | SOUTHERN BLUE FLAG |
| 4 | Juglans nigra | 3 | FACU | Nt | Tree | BLACK WALNUT |
| 4 | Juncus dudleyi | 0 | FAC | Nt | P-Forb | DUDLEY'S RUSH |
| 6 | Juncus nodosus | -5 | OBL | Nt | P-Forb | JOINT RUSH |
| 0 | Juncus tenuis | 0 | FAC | Nt | P-Forb | PATH RUSH |
| 3 | Juncus torreyi | -3 | FACW | Nt | P-Forb | TORREY'S RUSH |
| 1 | Juniperus virginiana | 3 | FACU | Nt | Tree | EASTERN RED CEDAR |
| 0 | KOCHIA SCOPARIA | 4 | FACU- | Ad | A-Forb | BELVEDERE SUMMER CYPRESS |
| 1 | Lactuca canadensis | 2 | FACU+ | Nt | B-Forb | WILD LETTUCE |
| 0 | LACTUCA SERRIOLA | 0 | FAC | Ad | B-Forb | PRICKLY LETTUCE |
| 2 | Laportea canadensis | -3 | FACW | Nt | P-Forb | CANADA WOOD NETTLE |
| 6 | Lathyrus palustris v. myrtifolius | -5 | OBL | Nt | P-Forb | MARSH VETCHLING |
| 3 | Leersia oryzoides | -5 | OBL | Nt | P-Grass | RICE CUT GRASS |
| 4 | Leersia virginica | -3 | FACW | Nt | P-Grass | WHITE GRASS |
| 3 | Lemna minor | -5 | OBL | Nt | A-Forb | SMALL DUCKWEED |
| 0 | LEONURUS CARDIACA | 5 | UPL | Ad | P-Forb | MOTHERWORT |
| 0 | LEPTOCHLOA ACUMINATA | 0 | FAC | Ad | A-Grass | SALT MEADOW GRASS |
| 0 | LEUCANTHEMUM VULGARE | 5 | UPL | Ad | P-Forb | OX-EYE DAISY |
| 6 | Lilium michiganense | -1 | FAC+ | Nt | P-Forb | MICHIGAN LILY |
| 0 | LINARIA VULGARIS | 5 | UPL | Ad | A-Forb | BUTTER-AND-EGGS |
| 4 | Lobelia siphilitica | -4 | FACW+ | Nt | P-Forb | GREAT BLUE LOBELIA |
| 0 | LONICERA MAACKII | 5 | UPL | Ad | Shrub | AMUR HONEYSUCKLE |
| 5 | Lonicera cf. prolifera (sterile) | 5 | UPL | Nt | W-Vine | GRAPE HONEYSUCKLE |
| 0 | LONICERA X BELLA | 3 | FACU | Ad | Shrub | SHOWY FLY HONEYSUCKLE |
| 0 | LOTUS CORNICULATUS | 1 | FAC- | Ad | P-Forb | BIRDSFOOT TREFOIL |
| 4 | Ludwigia palustris v. americana | -5 | OBL | Nt | P-Forb | MARSH PURSLANE |
| 0 | LYCHNIS ALBA | 5 | UPL | Ad | A-Forb | WHITE CAMPION |
| 3 | Lycopus americanus | -5 | OBL | Nt | P-Forb | COMMON WATER HOREHOUND |
| 5 | Lycopus virginicus | -5 | OBL | Nt | P-Forb | BUGLE WEED |
| 4 | Lysimachia ciliata | -3 | FACW | Nt | P-Forb | FRINGED LOOSESTRIFE |
| 0 | LYSIMACHIA NUMMULARIA | -4 | FACW+ | Ad | P-Forb | MONEYWORT |
| 5 | Lythrum alatum | -5 | OBL | Nt | P-Forb | WINGED LOOSESTRIFE |
| 0 | LYTHRUM SALICARIA | -5 | OBL | Ad | P-Forb | PURPLE LOOSESTRIFE |
| 3 | Malus ioensis | 5 | UPL | Nt | Tree | IOWA CRAB |
| 0 | MEDICAGO LUPULINA | 1 | FAC- | Ad | A-Forb | BLACK MEDICK |
| 0 | MELILOTUS ALBA | 3 | FACU | Ad | B-Forb | WHITE SWEET CLOVER |
| 0 | MELILOTUS OFFICINALIS | 3 | FACU | Ad | B-Forb | YELLOW SWEET CLOVER |
| 4 | Menispermum canadense | -1 | FAC+ | Nt | W-Vine | MOONSEED |
| 4 | Mentha arvensis v. villosa | -3 | FACW | Nt | P-Forb | WILD MINT |
| 4 | Monarda fistulosa | 3 | FACU | Nt | P-Forb | WILD BERGAMONT |
| 0 | MORUS ALBA | 0 | FAC | Ad | Tree | WHITE MULBERRY |

**Appendix 14 continued**

| C | Scientific Name | W | Wetness | Origin | Physiog. | Common Name |
|---|---|---|---|---|---|---|
| 3 | Muhlenbergia frondosa | -3 | FACW | Nt | P-Grass | COMMON SATIN GRASS |
| 0 | MYOSOTON AQUATICUM | -1 | FAC+ | Ad | P-Forb | GIANT CHICKWEED |
| 0 | NASTURTIUM OFFICINALE | -5 | OBL | Ad | P-Forb | WATER CRESS |
| 0 | NEPETA CATARIA | 1 | FAC- | Ad | P-Forb | CATNIP |
| 1 | Oenothera biennis | 3 | FACU | Nt | B-Forb | COMMON EVENING PRIMROSE |
| 3 | Osmorhiza longistylis | 4 | FACU- | Nt | P-Forb | ANISE ROOT |
| 0 | Oxalis dillenii | 3 | FACU | Nt | P-Forb | COMMON WOOD SORREL |
| 0 | Oxalis stricta | 3 | FACU | Nt | P-Forb | TALL WOOD SORREL |
| 0 | Panicum dichotomiflorum | -2 | FACW- | Nt | A-Grass | FALL PANICUM |
| 4 | Panicum virgatum | -1 | FAC+ | Nt | P-Grass | PRAIRIE SWITCH GRASS |
| 2 | Parthenocissus quinquefolia | 1 | FAC- | Nt | W-Vine | VIRGINIA CREEPER |
| 0 | PASTINACA SATIVA | 5 | UPL | Ad | B-Forb | WILD PARSNIP |
| 2 | Penthorum sedoides | -5 | OBL | Nt | P-Forb | DITCH STONECROP |
| 0 | PHALARIS ARUNDINACEA | -4 | FACW+ | Ad | P-Grass | REED CANARY GRASS |
| 0 | PHLEUM PRATENSE | 3 | FACU | Ad | P-Grass | TIMOTHY |
| 1 | Phragmites australis | -4 | FACW+ | Nt | P-Grass | COMMON REED |
| 4 | Phryma leptostachya | 5 | UPL | Nt | P-Forb | LOPSEED |
| 1 | Phyla lanceolata | -5 | OBL | Nt | P-Forb | FOG FRUIT |
| 2 | Physalis heterophylla | 5 | UPL | Nt | P-Forb | CLAMMY GROUND CHERRY |
| 0 | Physalis subglabrata | 5 | UPL | Nt | P-Forb | SMOOTH GROUND CHERRY |
| 6 | Physostegia virginiana | -3 | FACW | Nt | P-Forb | OBEDIENT PLANT |
| 1 | Phytolacca americana | 1 | FAC- | Nt | P-Forb | POKEWEED |
| 3 | Pilea pumila | -3 | FACW | Nt | A-Forb | CANADA CLEARWEED |
| 0 | PINUS NIGRA | 5 | UPL | Ad | Tree | AUSTRIAN PINE |
| 0 | PLANTAGO LANCEOLATA | 0 | FAC | Ad | P-Forb | ENGLISH PLANTAIN |
| 0 | Plantago rugelii | 0 | FAC | Nt | A-Forb | RED-STALKED PLANTAIN |
| 0 | POA COMPRESSA | 2 | FACU+ | Ad | P-Grass | CANADIAN BLUE GRASS |
| 0 | POA PRATENSIS | 1 | FAC- | Ad | P-Grass | KENTUCKY BLUE GRASS |
| 0 | POA TRIVIALIS | -3 | FACW | Ad | P-Grass | MEADOW GRASS |
| 4 | Podophyllum peltatum | 3 | FACU | Nt | P-Forb | MAY APPLE |
| 4 | Polygonatum commutatum | 3 | FACU | Nt | P-Forb | GREAT SOLOMON SEAL |
| 3 | Polygonum amphibium | -5 | OBL | Nt | P-Forb | WATER KNOTWEED |
| 0 | Polygonum lapathifolium | -4 | FACW+ | Nt | A-Forb | CURTTOP LADY'S THUMB |
| 1 | Polygonum pensylvanicum | -4 | FACW+ | Nt | A-Forb | PINKWEED |
| 0 | POLYGONUM PERSICARIA | -3 | FACW | Ad | A-Forb | LADY'S THUMB |
| 2 | Polygonum scandens | 0 | FAC | Nt | H-Vine | CLIMBING FALSE BUCKWHEAT |
| 3 | Polygonum virginianum | 0 | FAC | Nt | P-Forb | VIRGINIA KNOTWEED |
| 0 | POPULUS ALBA | 5 | UPL | Ad | Tree | WHITE POPLAR |
| 2 | Populus deltoides | -1 | FAC+ | Nt | Tree | EASTERN COTTONWOOD |
| 0 | POTAMOGETON CRISPUS | -5 | OBL | Ad | P-Forb | BEGINNER'S PONDWEED |
| 5 | Potamogeton pectinatus | -5 | OBL | Nt | P-Forb | COMB PONDWEED |
| 7 | Potamogeton cf. pusillus (sterile) | -5 | OBL | Nt | P-Forb | BABY PONDWEED |
| 0 | Potentilla norvegica | 0 | FAC | Nt | A-Forb | ROUGH CINQUEFOIL |
| 0 | POTENTILLA RECTA | 5 | UPL | Ad | P-Forb | SULFUR CINQUEFOIL |
| 3 | Potentilla simplex | 4 | FACU- | Nt | P-Forb | COMMON CINQUEFOIL |
| 1 | Prunella vulgaris v. elongata | 0 | FAC | Nt | P-Forb | SELF-HEAL |
| 1 | Prunus serotina | 3 | FACU | Nt | Tree | WILD BLACK CHERRY |
| 3 | Prunus virginiana | 1 | FAC- | Nt | Shrub | COMMON CHOKE CHERRY |

**Appendix 14 continued**

| C | Scientific Name | W | Wetness | Origin | Physiog. | Common Name |
|---|---|---|---|---|---|---|
| 4 | Ptelea trifoliata | 2 | FACU+ | Nt | Shrub | WAFER ASH |
| 0 | PUCCINELLIA DISTANS | -5 | OBL | Ad | P-Grass | ALKALI GRASS |
| 5 | Pycnanthemum virginianum | -4 | FACW+ | Nt | P-Forb | COMMON MOUNTAIN MINT |
| 5 | Quercus alba | 3 | FACU | Nt | Tree | WHITE OAK |
| 5 | Quercus macrocarpa | 1 | FAC- | Nt | Tree | BURR OAK |
| 5 | Quercus rubra | 3 | FACU | Nt | Tree | NORTHERN RED OAK |
| 5 | Quercus velutina | 5 | UPL | Nt | Tree | BLACK OAK |
| 1 | Ranunculus abortivus | -2 | FACW- | Nt | A-Forb | LITTLE-LEAF BUTTERCUP |
| 2 | Ranunculus cymbalaria | -5 | OBL | Nt | P-Forb | SEASIDE CROWFOOT |
| 5 | Ranunculus fascicularis | 3 | FACU | Nt | P-Forb | EARLY BUTTERCUP |
| 3 | Ranunculus sceleratus | -5 | OBL | Nt | A-Forb | CURSED CROWFOOT |
| 0 | RHAMNUS CATHARTICA | 3 | FACU | Ad | Shrub | COMMON BUCKTHORN |
| 0 | RHAMNUS FRANGULA | -1 | FAC+ | Ad | Shrub | GLOSSY BUCKTHORN |
| 4 | Rhus aromatica | 5 | UPL | Nt | Shrub | AROMATIC SUMAC |
| 1 | Rhus glabra | 5 | UPL | Nt | Shrub | SMOOTH SUMAC |
| 5 | Ribes americanum | -3 | FACW | Nt | Shrub | WILD BLACK CURRENT |
| 2 | Ribes missouriense | 5 | UPL | Nt | Shrub | MISSOURI GOOSEBERRY |
| 0 | ROBINIA HISPIDA | 5 | UPL | Ad | Shrub | BRISTLY LOCUST |
| 1 | Robinia pseudo-acacia | 4 | FACU- | Nt | Tree | BLACK LOCUST |
| 4 | Rorippa palustris v. fernaldiana | -5 | OBL | Nt | A-Forb | MARSH YELLOW CRESS |
| 0 | RORIPPA SYLVESTRIS | -5 | OBL | Ad | P-Forb | CREEPING YELLOW CRESS |
| 4 | Rosa carolina | 4 | FACU- | Nt | Shrub | PASTURE ROSE |
| 0 | ROSA MULTIFLORA | 3 | FACU | Ad | Shrub | JAPANESE ROSE |
| 2 | Rubus occidentalis | 3 | FACU | Nt | Shrub | BLACK RASPBERRY |
| 2 | Rubus pensylvanicus | 1 | FAC- | Nt | Shrub | YANKEE BLACKBERRY |
| 3 | Rudbeckia laciniata | -4 | FACW+ | Nt | P-Forb | WILD GOLDEN GLOW |
| 0 | RUMEX CRISPUS | -1 | FAC+ | Ad | P-Forb | CURLY DOCK |
| 7 | Sagittaria cuneata | -5 | OBL | Nt | P-Forb | ARUM-LEAVED ARROWHEAD |
| 4 | Sagittaria latifolia | -5 | OBL | Nt | P-Forb | COMMON ARROWHEAD |
| 4 | Salix amygdaloides | -3 | FACW | Nt | Tree | PEACH-LEAVED WILLOW |
| 1 | Salix exigua | -5 | OBL | Nt | Shrub | SANDBAR WILLOW |
| 5 | Salix humilis | 3 | FACU | Nt | Shrub | PRAIRIE WILLOW |
| 3 | Salix nigra | -5 | OBL | Nt | Tree | BLACK WILLOW |
| 0 | SALIX X RUBENS | -4 | FACW+ | Ad | Tree | HYBRID CRACK WILLOW |
| 2 | Sambucus canadensis | 4 | FACU- | Nt | Shrub | COMMON ELDER |
| 4 | Sanicula canadensis | 2 | FACU+ | Nt | B-Forb | CANADIAN BLACK SNAKEROOT |
| 2 | Sanicula gregaria | -1 | FAC+ | Nt | P-Forb | CLUSTERED BLACK SNAKEROOT |
| 0 | SAPONARIA OFFICINALIS | 3 | FACU | Ad | P-Forb | BOUNCING BET |
| 6 | Scirpus acutus | -5 | OBL | Nt | P-Sedge | HEARD-STEMMED BULRUSH |
| 3 | Scirpus americanus | -5 | OBL | Nt | P-Sedge | CHAIRMAKER'S RUSH |
| 4 | Scirpus atrovirens | -5 | OBL | Nt | P-Sedge | DARK GREEN RUSH |
| 3 | Scirpus fluviatilis | -5 | OBL | Nt | P-Sedge | RIVER BULRUSH |
| 4 | Scirpus paludosus | -5 | OBL | Nt | P-Sedge | ALKALI BULRUSH |
| 3 | Scirpus pendulus | -5 | OBL | Nt | P-Sedge | RED BULRUSH |
| 4 | Scirpus tabernaemontanii | -5 | OBL | Nt | P-Sedge | GREAT BULRUSH |
| 4 | Scrophularia marilandica | 4 | FACU- | Nt | P-Forb | LATE FIGWORT |
| 4 | Scutellaria lateriflora | -5 | OBL | Nt | P-Forb | MAD-DOG SKULLCAP |
| 3 | Senecio cf. pauperculus (sterile) | -1 | FAC+ | Nt | P-Forb | BALSAM RAGWORT |

**Appendix 14 continued**

| C | Scientific Name | W | Wetness | Origin | Physiog. | Common Name |
|---|---|---|---|---|---|---|
| 6 | Senecio plattensis | 4 | FACU- | Nt | P-Forb | PRAIRIE RAGWORT |
| 0 | SETARIA GLAUCA | 0 | FAC | Ad | A-Grass | PIGEON GRASS |
| 8 | Silene nivea | -3 | FACW | Nt | P-Forb | SNOWY CAMPION |
| 5 | Silphium integrifolium | 5 | UPL | Nt | P-Forb | ROSIN WEED |
| 4 | Smilacina racemosa | 3 | FACU | Nt | P-Forb | FEATHERY FALSE SOLOMON SEAL |
| 5 | Smilacina stellata | 1 | FAC- | Nt | P-Forb | STARRY FALSE SOLOMON SEAL |
| 5 | Smilax ecirrhata | 5 | UPL | Nt | P-Forb | UPRIGHT CARRION FLOWER |
| 3 | Smilax hispida | 0 | FAC | Nt | W-Vine | BRISTLY GREEN BRIER |
| 4 | Smilax lasioneuron | 5 | UPL | Nt | H-Vine | COMMON CARRION FLOWER |
| 0 | SOLANUM DULCAMARA | 0 | FAC | Ad | W-Vine | BITTERSWEET NIGHTSHADE |
| 0 | Solanum ptycanthum | 4 | FACU- | Nt | A-Forb | BLACK NIGHTSHADE |
| 1 | Solidago canadensis | 3 | FACU | Nt | P-Forb | CANADA GOLDENROD |
| 3 | Solidago gigantea | -3 | FACW | Nt | P-Forb | LATE GOLDENROD |
| 0 | SOLIDAGO SEMPERVIRENS | -2 | FACW- | Ad | P-Forb | SEASIDE GOLDENROD |
| 0 | SONCHUS ARVENSIS v. GLABRESCENS | 1 | FAC- | Ad | P-Forb | FIELD SOW THISTLE |
| 4 | Sorghastrum nutans | 2 | FACU+ | Nt | P-Grass | INDIAN GRASS |
| 4 | Spartina pectinata | -4 | FACW+ | Nt | P-Grass | PRAIRIE CORD GRASS |
| 0 | SPERGULARIA MEDIA | 3 | FACU | Ad | A-Forb | SALT SPURREY |
| 5 | Stachys palustris | -5 | OBL | Nt | P-Forb | WOUNDWORT |
| 5 | Stachys tenuifolia v. hispida | -5 | OBL | Nt | P-Forb | MARSH HEDGE NETTLE |
| 0 | SUAEDA DEPRESSA | -3 | FACW | Ad | A-Forb | SEA BLITE |
| 0 | TARAXACUM OFFICINALE | 3 | FACU | Ad | P-Forb | COMMON DANDELION |
| 3 | Teucrium canadense v. virginicum | -2 | FACW- | Nt | P-Forb | AMERICAN GERMANDER |
| 5 | Thalictrum dasycarpum | -2 | FACW- | Nt | P-Forb | PURPLE MEADOW RUE |
| 5 | Thalictrum dasycarpum v. hypoglaucum | -2 | FACW- | Nt | P-Forb | SMOOTH MEADOW RUE |
| 1 | Toxicodendron radicans | 3 | FACU | Nt | W-Vine | POISON IVY |
| 3 | Tradescantia ohiensis | 2 | FACU+ | Nt | P-Forb | COMMON SPIDERWORT |
| 0 | TRAGOPOGON PRATENSIS | 5 | UPL | Ad | B-Forb | COMMON GOAT'S BEARD |
| 0 | TRIFOLIUM PRATENSE | 2 | FACU+ | Ad | P-Forb | RED CLOVER |
| 0 | TRIFOLIUM REPENS | 2 | FACU+ | Ad | P-Forb | WHITE CLOVER |
| 5 | Trillium recurvatum | 4 | FACU- | Nt | P-Forb | RED TRILLIUM |
| 0 | TYPHA ANGUSTIFOLIA | -5 | OBL | Ad | P-Forb | NARROW-LEAVED CATTAIL |
| 1 | Typha latifolia | -5 | OBL | Nt | P-Forb | BROAD-LEAVED CATTAIL |
| 5 | Ulmus americana | -2 | FACW- | Nt | Tree | AMERICAN ELM |
| 0 | ULMUS PUMILA | 5 | UPL | Ad | Tree | SIBERIAN ELM |
| 2 | Urtica dioica | -1 | FAC+ | Nt | P-Forb | TALL NETTLE |
| 0 | VERBASCUM THAPSUS | 5 | UPL | Ad | B-Forb | WOOLLY MULLEIN |
| 3 | Verbena hastata | -4 | FACW+ | Nt | P-Forb | BLUE VERVAIN |
| 3 | Verbena urticifolia | -1 | FAC+ | Nt | P-Forb | WHITE VERVIAN |
| 4 | Verbesina alternifolia | -3 | FACW | Nt | P-Forb | WINGSTEM |
| 5 | Vernonia fasciculata | -3 | FACW | Nt | P-Forb | COMMON IRONWEED |
| 7 | Veronica catenata | -5 | OBL | Nt | P-Forb | WATER SPEEDWELL |
| 0 | VERONICA SERPYLLIFOLIA | -3 | FACW | Ad | P-Forb | THYME-LEAVED SPEEDWELL |
| 4 | Viburnum lentago | -1 | FAC+ | Nt | Shrub | NANNYBERRY |
| 0 | VIBURNUM OPULUS | 0 | FAC | Ad | Shrub | EUROPEAN HIGH-BUSH CRANBERRY |
| 0 | VICIA SATIVA v. NIGRA | 4 | FACU- | Ad | A-Forb | NARROW-LEAVED VETCH |
| 4 | Viola missouriensis | -3 | FACW | Nt | P-Forb | MISSOURI VIOLET |
| 1 | Viola pratincola | 0 | FAC | Nt | P-Forb | COMMON BLUE VIOLET |

**Appendix 14 continued**

| C | Scientific Name | W | Wetness | Origin | Physiog. | Common Name |
|---|---|---|---|---|---|---|
| 2 | Vitis riparia | -2 | FACW- | Nt | W-Vine | RIVERBANK GRAPE |
| 0 | Xanthium strumarium | 0 | FAC | Nt | A-Forb | COCKLEBUR |
| 8 | Zannichellia palustris | -5 | OBL | Nt | P-Forb | HORNED PONDWEED |
| 6 | Zizia aurea | -1 | FAC+ | Nt | P-Forb | GOLDEN ALEXANDERS |

Wetland classification categories follow Reed (1988) for Region 3. Further details are from Taft et al. (1997). Plants are placed within one of five wetland indicator categories: Obligate Wetland (OBL), Facultative Wetland (FACW), Facultative (FAC), Facultative Upland (FACU), and Upland (UPL). Within any of these five categories, a "+" indicates that a particular taxon has a greater tendency to occur in wetlands while a "-" indicates a lesser tendency. Following this, indicator status categories, in descending order of probability of occurrence in wetland habitat to upland habitat, would be:

| | |
|---|---|
| -5 Obligate Wetland | (OBL) |
| -4 Facultative Wetland + | (FACW+) |
| -3 Facultative Wetland | (FACW) |
| -2 Facultative Wetland - | (FACW-) |
| -1 Facultative + | (FAC+) |
| 0 Facultative | (FAC) |
| +1 Facultative - | (FAC-) |
| +2 Facultative Upland + | (FACU+) |
| +3 Facultative Upland | (FACU) |
| +4 Facultative Upland - | (FACU-) |
| +5 Upland | (UPL) |